The background of the cover is a photograph of the Houston skyline at sunset. The sun is low on the left side, creating a bright orange glow and lens flare. The city buildings are silhouetted against the sky, and their reflection is visible in the water in the foreground. The overall mood is serene and reflective.

HOUSTON history

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Resilient Houston: Documenting Hurricane Harvey

UNIVERSITY of HOUSTON
CENTER for PUBLIC HISTORY

LETTER FROM THE EDITOR – A Flooding Timeline that Keeps on Growing



Debbie Z. Harwell, editor.

In the aftermath of local storms, many Houstonians claim the frequency of flooding has increased, raising the question: how accurate are those statements? The city's first flood occurred in April 1837, just eight months after Houston was founded at the confluence of Buffalo and White Oak Bayous. Six months later another flood found Main Street under

four feet of water. But Houstonians persisted – and so did the flooding. In Houston's first 100 years, it experienced thirty-six floods; in the next eighty-three years, it has seen an additional 146, or four times as many floods as in the first century. One might think the tropical systems that come ashore are to blame for this phenomenon, but they accounted for only 15 percent (27) of these events. The other 85 percent (155) were caused by rain that fell in large quantities in a short period of time or lingered for multiple days, including twenty-two winter storms.

Except for the 1900 Storm, which hit Galveston but also caused fatalities and flooding on the mainland, Houston's worst early floods occurred in 1929 and 1935, causing multiple deaths and taking out homes, businesses, bridges, and the main water plant. With two back-to-back floods of this magnitude it was time to act. During the New Deal era, the federal government put the Army Corps of Engineers in the flood control business, and Houston received funding for the Barker and Addicks Reservoirs, which were completed in 1946 and 1948 respectively. Although the original plan proposed additional drainage channels north and south of Buffalo Bayou that were never built, the reservoirs brought some flooding relief along Buffalo Bayou.

Somewhat notoriously, Houstonians resisted control over development and voted down zoning four times between 1927 and 1962, which some argue exacerbated flooding. Developers also fought against the National Flood Insurance Program (NFIP), passed in 1968, because it required them to modify their practices and disclose to buyers if a property was in the 100-year floodplain. Nevertheless, county residents, weary of flood losses, supported NFIP participation four to one.

As Houston grew, so did its flooding problem across all twenty-two Harris County watersheds. The Texas Medical Center and areas along Brays Bayou flooded in 1976 after thirteen inches of rain. By 1983, floods regularly left thousands of homes inundated. In 1994, ninety subdivisions, including 3,400 homes, flooded around Houston. Many Kingwood residents considered this flood their benchmark,

while residents of other neighborhoods looked at Tropical Storm Allison, which brought thirty-eight inches of rain in 2001, to calculate their flood risk. Thus, many across the region who thought they were safe had no flood insurance when Harvey hit.

Today some people point fingers at flood victims, saying their problems are their own fault because they built or bought a house in the floodplain. In reality, their homes are located in areas that did not have a flooding problem years earlier; rather, development around them or upstream spawned the flooding. This has been documented in Meyerland with three floods in the last five years, and the recent floods in Kingwood's Elm Grove make a similar case. The latter had never flooded, but it flooded twice in four months in 2019. Development on Elm Grove's northern border, just across the Montgomery County line, is believed to have created the flooding, and, now, Harris County is working to acquire that land for a detention facility. Sadly, it is too late for residents who lacked flood insurance because they believed they were safe after escaping Harvey.

The list of area floods demonstrates that Houston has experienced more frequent flooding of an increasing severity, overburdening our infrastructure. Everyone thought Tropical Storm Allison was "off the charts" until Harvey hit. Although not as bad as Harvey, 2019's Tropical Storm Imelda became the nation's seventh-wettest rain event in just two days. Major floods in four of the last six years demonstrate that the old ways of addressing flooding a little at a time, or doing nothing at all, are inadequate.

In the aftermath of Harvey, the University of Houston's Center for Public History (CPH) developed the oral history project, *Resilient Houston: Documenting Hurricane Harvey*, to explore Houstonians' experiences. Over three years, CPH faculty trained their students in conducting oral histories, editing video, creating webpages, and writing history. Students and faculty gathered stories from over ninety Harvey survivors, responders, and volunteers, which will eventually be available to the public through Special Collections at the University of Houston Library. Students created a website with an interview map and short videos of their interviews, and they produced the content for this magazine. CPH director Monica Perales, and my colleagues Julie Cohn, Mark Goldberg, Wes Jackson, Todd Romero, and Sherridan Schwartz also provided invaluable assistance in seeing this project through from concept to fruition.

Hurricane Harvey was a massive event, and many more stories remain to be told. We hope that you find these articles and neighborhood narratives informative and inspiring, and that you will visit our website at www.uh.edu/class/documenting-hurricane-harvey/ to meet these gracious participants who symbolize resilience.

**Resilient Houston:
 Documenting Hurricane Harvey**

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Cover Photo: *The sun rises over the city of Houston and a flooded Buffalo Bayou, offering a symbol of hope and resilience in the wake of Hurricane Harvey.* Photo by J. Henning Buchholz courtesy of Shutterstock.

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Before the Storm: Forecasting Hurricane Harvey

By Samantha de Leon



The mammoth Hurricane Harvey made landfall on the Texas coast around 10:00 p.m. on Friday, August 25, 2017.

Photo courtesy of the National Oceanic and Atmospheric Administration (NOAA).

For people living in southeastern Texas, hurricanes are guaranteed to make a few appearances. The colossal storms are inescapable and, in many ways, unpredictable. For nine years, no hurricanes made landfall in the Houston region after Hurricane Ike, which came ashore at Galveston in 2008. While those summers were calm, each one made Texans like me feel anxious, wondering when the streak would end. The question was not *if* another storm would come, but *when*.

The answer came on August 13, 2017, when a large wave emerged off of the West African coast and moved through the Lesser Antilles. Days later, on the afternoon of August 17, the wave evolved into a tropical storm as it crossed the Atlantic Basin, and the National Weather Service (NWS) gave it a name: Tropical Storm Harvey. The storm began to downgrade as it entered the Caribbean, dissipating and scattering so much that the NWS did not issue forecasts or advisories on Harvey for two days. Upon crossing the Yucatán Peninsula and arriving at the Bay of Campeche on August 23, the weakened storm again became a tropical wave, still a seemingly small threat. The National Hurricane Center (NHC) had originally expected Harvey to become either a weak Category 1 hurricane or a strong tropical storm upon landfall along the middle Texas coast.¹

That prediction changed dramatically less than twenty-four hours later on August 24, when the NHC called the new forecast “quite concerning.” Overnight, Harvey had strengthened and was expected to make landfall the next day as a major Category 3 hurricane (winds 111-129 mph). Besides strong winds, forecasters expected the storm to bring between fifteen and twenty inches of rainfall and life-threatening floods. Shortly before Harvey’s landfall, the NHC released another forecast more severe than the last, predicting up to forty inches of rain and a storm surge up to thirteen feet high.² At this point, it became clear that a catastrophic storm was headed towards Texas and that our hurricane drought had ended. One question, however, still remained: Was the new prediction true?

To find the answer, I spoke to Alan Lammey, a senior markets analyst in the energy industry who took part in the Resilient Houston: Documenting Hurricane Harvey project. In his profession, Lammey needs to know what kind of weather to expect as it directly affects the prices of natural gas and oil. As a result, he has worked alongside experienced meteorologists and become a weather guru of sorts, running the radio show *Energy Week* from 2006 to 2016, where he built a reputation around his weather credibility. He has been studying weather patterns for the past

twenty years and has lived through Tropical Storm Allison, and Hurricanes Andrew, Rita, and Ike. He thought he had seen everything until that August when Hurricane Harvey developed.³

Lammey indicated that meteorologists initially anticipated Harvey making landfall near Port Aransas, approximately 200 miles south of Houston; then, they predicted, the storm would head northwest towards San Antonio. However, Lammey believed that Harvey would follow the coastline towards Houston and the remaining Southeast Texas coastal areas.⁴

While Lammey was confident in the path of the storm, he was skeptical, along with other local meteorologists, about the unheard-of amounts of rainfall anticipated. He described the precipitation models as “off the charts outrageous.”⁵ The estimations of over forty inches of rain were sure to devastate Houston and many cities across Texas.

Lammey found the thought of that much rainfall so unnerving that he made several posts on Facebook to warn his friends of the potential catastrophic damage coming their way. He tried his best to provide an accurate timeline for Harvey, along with expected landfall dates, precipitation models, and facts about the storm. “Believe it or not, I came up against a lot of pushback and a lot of ridicule,” Lammey reported. “A lot of people called me a fearmonger.”⁶

At the time, I had not heard any of those predictions. As Harvey grew in the Gulf, I went to WalMart to purchase a shoe rack. To my surprise, I found the store absolutely packed on a weekday. My confusion blossomed further upon seeing the nearly empty shelves of bread and bottled water and long check-out lines. Only after eavesdropping in line did I learn of Harvey’s development in the Gulf and immediately felt annoyed. In my experience, forecasters often exaggerated predictions of these tropical systems.

One example that comes to mind is 2005’s Hurricane



Jonathan Vance with the Houston Fire Department (top) and Jeff Thibodeaux with Acadian Ambulance Service tracked the storm during Hurricane Harvey to properly position their resources.

Photo courtesy of James Sheffield.

Rita, which forecasters predicted would hit Houston. Rita developed into a tropical storm in the Caribbean, and within two weeks, had grown to a Category 3 hurricane in the Gulf of Mexico. Thirty-six hours later, the Gulf’s warm waters helped Rita blossom into a Category 5 storm that had its sights on the Texas coast. The intensification caused a wave of panic because it followed just three weeks after Hurricane Katrina’s massive devastation and loss of life in Louisiana, Mississippi, and Alabama. The National Oceanic and Atmospheric Administration (NOAA) estimated that local officials ordered and encouraged over two million people in Texas and Louisiana to evacuate for Rita, making it the largest mass evacuation in U.S. history. Additionally, hundreds of thousands of people in the Houston area who were not included in the evacuation order also chose to flee out of fear, leaving traffic at a complete standstill. Hurricane Rita changed course, landing in the Beaumont area, and 107 people died in the evacuation of the Houston region, most from heat-related problems while they sat stalled on roadways, many of them out of gas.⁷

This disastrous evacuation was one reason the City of Houston did not issue an evacuation order for Harvey. Houston Mayor Sylvester Turner did not want to impose an evacuation, saying that “you literally cannot put 6.5 million people on the road,” and that a mass evacuation of that magnitude would be a “major calamity.” Then Harris County judge Ed Emmett echoed the mayor’s sentiments, saying that evacuations are pointless since it is impossible to know exactly where rain will fall.⁸ Additionally, if people got caught on the road again, this time they could be stranded in high water with no means of escape.

As Harvey approached the lower Texas coast, many unsubstantiated reports surfaced from random sources on social media predicting that thousands of Houston homes would be under water from torrential rainfall. This prompted local news station KHOU 11 to report on the rumors on August 24, 2017, saying that Emmett and meteorologist Jeff Lindner from the Harris County Flood Control District



The storm track map shows the movement of Hurricane Harvey across the Caribbean Sea and into Louisiana, where it diminished before its rains moved northeast.

Photo courtesy of Jim Williams.

called the rumors false, adding that the viral posts had not come from official sources. Mayor Turner also released a statement begging Houstonians not to rely on unofficial weather reports and debunking the rumor that the city had called for an evacuation, which it had not. “Rumors are nothing new,” Turner said, “but the widespread use of social media has needlessly frightened many people today.” Although the unsubstantiated reports seemed outrageous, just like Lammey’s predictions, many of the warnings heeded true — not only about Hurricane Harvey’s intensity but also about the city’s lack of preparedness.⁹

Nevertheless, Houston did what it could to prepare. One of the earliest reports on Harvey from the City of Houston appeared on August 22 from Houston’s Emergency Operations Center, in which forecasters warned a “significant amount of rainfall [was expected] over the next five days, which [would] likely lead to flooding.” Two days later, the City of Houston released an update reporting that over twenty inches of rain were expected and that officials had positioned resources to help. For example, the Houston Fire Department had evacuation boats ready to go while the Houston Police Department and the Public Works and Engineering Department had mobilized their high-water evacuation vehicles. The update also advised Houstonians to use caution in areas prone to flooding. Additionally, prior to Harvey’s arrival, FEMA “pre-positioned supplies and personnel in [Texas]” to help as needed. Lastly, in anticipation of the storm’s severity, President Donald Trump issued a major disaster declaration on August 25, shortly before the storm made landfall, which freed federal funding for local governments and nonprofits, such as the Red Cross.¹⁰

The storm that had materialized so quickly arrived just as fast. Houstonians held their breath as schools cancelled classes, people emptied grocery shelves, and drivers lined up for gas. The once bustling city came to a complete and utter halt. Houston had done all it could on a few days’ notice and had no choice but to hope for the best. On August 25, many



Total rainfall for Hurricane Harvey, from August 25 to August 30, 2017, reached record heights, forcing the National Weather Service to use new colors to represent the amount of total rainfall.

Photo courtesy of the National Weather Service.

of us wondered what was to come when Hurricane Harvey made landfall near Rockport, Texas, at 10:00 p.m. on that fateful Friday.

The outrageous claims of over forty inches of rain were hard to fathom, and even when the rain began to fall, it still felt impossible. *Texas Monthly* reported that 1.2 trillion gallons of rainwater fell and that over forty inches of water had accumulated in Houston, which was “more than the annual accumulation [of precipitation] in the United States [in 2016].” The magazine indicated that over 300,000 residences and more than 300,000 vehicles were affected, with property damage exceeding \$200 billion dollars. The rainfall was enough to fill NRG Stadium more than fourteen times and run Niagara Falls for fifteen days.¹¹

Although battered, the city had clearly survived the storm, and the devastating tempest that many Texans like me had feared had finally come to pass. As Houston began its recovery efforts, I could not help but ask myself the same burning questions that had haunted me for almost a decade: *When* will it happen again, and will we be ready? Only time will tell.

Samantha de Leon graduated *cum laude* with a degree in history from the University of Houston. She plans to attend graduate school and is currently an intern for *Houston History* and a freelance writer for the *Houston Chronicle*.

As the skies begin to clear over a flooded White Oak Bayou by Stude Park, downtown Houston remains shrouded in clouds.

Photo courtesy of Sarah Rodriguez.



Stories from the Watersheds: How Harvey Impacted Houston's Neighborhoods

By Nadia Abouzir

It is no secret that Hurricane Harvey devastated Houston, but how did it impact the city's individual communities? Floodplain maps offer insight into where the risk is greatest to experience a 100- or 500-year flood, but many of the affected neighborhoods surpassed these thresholds in 2017.

Though some local officials disagree, urban expansion in and around the city's twenty-two watersheds prior to Harvey is believed to have caused some homes that did not flood initially to become more susceptible in recent years. As Houston's population grew, the city expanded geographically through annexation and urbanization, building more suburbs and infrastructure where forests, prairies, and wetlands once graced the landscape. These outward developments, which exceeded 167,000 acres between 2001 and 2010, are further promoted by highway expansion.¹ The neighborhood experiences found here shine a light on how overdevelopment in some parts of Houston and underdevelopment of flood control infrastructure affected nearby communities.

CENTRAL AND SOUTHWEST HOUSTON

Central Houston along Buffalo and White Oak Bayous suffered extensive damage during Harvey, with water levels exceeding the city's high-water mark set in 2001's Tropical Storm Allison by at least five to seven feet. Buffalo Bayou acts as the main drainage system for both the Buffalo Bayou and White Oak Bayou watersheds with the two merging near downtown. Both bayous have been rectified — the process of widening, straightening, and lining a channel with concrete — to reduce flooding, but that method has been under scrutiny for over fifty years. Although intended to mitigate flooding, the technique has proved disastrous because it pushes water through the bayou with added force and velocity.² Thus, when Harvey swept in, overflow from Buffalo Bayou spilled over much of Central Houston.

Experts hypothesize urbanization and the proliferation of skyscrapers also play a role in this increased flooding. With Houston's decentralized nature, concrete covers large swaths of the region, causing rain that was once absorbed into the ground to pool on top of it. Further, the mass of tall

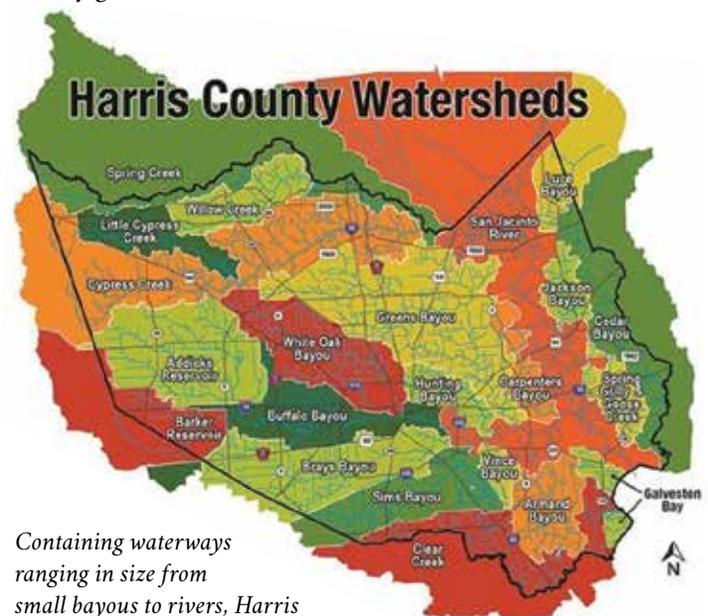


Running along Buffalo Bayou, Eleanor Tinsley Park was completely submerged after Harvey's rains. Photo courtesy of J. Daniel Escareño, Flickr.*

buildings, climate scientists Gabriele Villarini and Gabriel Vecchi argue, stops the air from moving forward, and instead pushes the moist, hot air into the cooler air above. This process creates an optimal environment for dense cloud formation, causing more rainfall in the city.³

In Southwest Houston, Brays Bayou, another rectified waterway, also reached record flood levels when Harvey's rainfall exceeded the 500-year flood mark in the Brays Bayou

watershed. Candace Beverly lived two blocks away from the bayou and had flooded during the 2015 Memorial Day flood. After Hurricane Harvey hit, many of her neighbors who stayed behind had to walk out of the subdivision through chest-high water. Her neighborhood, situated between Fondren and South Gessner, was under water for three days. When Beverly returned home, she found much of her furniture destroyed along with the home's infrastructure. Fortunately, neighbors, University of Houston students, All Hands Volunteers, and church members helped Beverly's family gut and fix their home.⁴



Containing waterways ranging in size from small bayous to rivers, Harris County's watersheds and sub-watersheds collect and drain rainfall into Galveston Bay.

Photo courtesy of the Harris County Flood Control District.

Local residents organized some of the area's volunteer efforts. For example, University of Houston history professor Douglas Erwing, whose University Oaks home near the campus and Brays Bayou did not flood, called on his students to help. For weeks, he organized them to muck and gut houses, feed the elderly, and volunteer at Lakewood Church.⁵

Currently, the Harris County Flood Control District (HCFCD) and the U.S. Army Corps of Engineers are involved in a project to reduce the flood risk along Brays Bayou. C-11 Project Brays is focused on seventy-five individual projects along the bayou that include widening the bayou from the Houston Ship Channel to Fondren Road and modifying bridges along the way. It will create four new detention basins to hold 3.5 billion gallons of stormwater.⁶

KASHMERE GARDENS AND NORTHEAST HOUSTON

While many Houston neighborhoods were nearly or fully recovered from Hurricane Harvey within a year, Kashmere Gardens remained largely underserved in 2018. The area is home to about 10,000 residents, 98 percent of them people of color, and 55 percent having an income under \$25,000 as of 2015. Located in the Hunting Bayou watershed, over 75 percent of the homes in Kashmere Gardens had flooded by August 27, 2017.⁷

Although the storm was terrifying, rebuilding their homes and community presented residents with the greatest challenge. A year after Harvey, long-time Kashmere Gardens resident Erin Jenkins still had numerous leaks in her ceiling, rampant bug infestations, and a smell that would not go away, leaving her feeling like she had lost her home completely to the storm. Eligible for FEMA disaster funding, she, and others like her, received an average of \$4,300 — a miniscule amount compared to the cost of restoring her home, which remained incomplete in 2018.⁸

Located in a flood zone, many area residents were unaware that if they had received FEMA flood assistance in the past, FEMA required them to have flood insurance to receive aid again. The rising cost of premiums — up to \$1,100 — made flood insurance cost-prohibitive for many, resulting in FEMA denying their funding. For these residents, looking for financial assistance was a time-consuming, frustrating process that burdened them further.⁹



In Lakewood, a neighborhood northeast of Kashmere Gardens, lifetimes of furniture and decorations became rubbish on the side of the road.

Photo courtesy of Revolution Messaging, Flickr.*

KINGWOOD

"That's just a fluke," many in Kingwood thought after the area, located by Lake Houston in the San Jacinto River watershed, flooded in 1994. Previously documented at a maximum height of 52.3 feet in October 1994, water levels at the Lake Houston Spillway were almost a foot higher during Harvey. Hundreds of nearby homes flooded due, in part, to the dam's limited ability to regulate water flow. Another key factor was that sand mines on the West Fork of the San Jacinto River breached, as they had done multiple times before. Over the years, the sand flowed downstream, shallowing the river and lake, which had no dredging program to maintain their depths. Retired geologist Tim Garfield found the sand created mouth bars, accumulations of sediment that inhibit water flow into the lake, causing water to back up and flood Kingwood neighborhoods.¹⁰



Sand washing down the San Jacinto River created a mouth bar. The channel has accumulated up to 16 feet of sediment since the Lake Houston dam was built.

Photo courtesy of Bob Rehak and reduceflooding.com.

John Barr, a Kingwood resident since 1990 and professor at Lone Star College-Kingwood, felt Harvey's effects at every turn. He and his wife watched water climb four feet, before entering their home and forcing them to evacuate. Additionally, seven of the nine buildings at Lone Star flooded, preventing Barr from reaching his office. Many of his colleagues, he recalled, "lost everything they owned, their files, mementos, valuable equipment." He felt a similar loss when he learned Kingwood High School, where he taught for many years, had five feet of water that destroyed much of his legacy there and did \$63 million in damage to the campus.¹¹

In response to the disaster, flood control projects underway included a \$47 million allotment to update the dam gates and an ongoing dredging project to remove the mouth bar and deepen the river.¹² Area residents hope these improvements will be completed in time to prevent future flooding.

WEST AND NORTHWEST HOUSTON

Once absorbing significant runoff from storms, large swaths of former prairie lands west of Houston are now covered in concrete, preventing water absorption and increasing flooding. At the headwaters of Buffalo Bayou, the Katy Prairie has shrunk from its original estimate between 500,000 and 750,000 acres to its current 20,000 legally protected acres. Development in the area, while economically attractive, has yielded problematic results. West Houston also contains Addicks and Barker Reservoirs, drainage basins created in



West Houston was severely flooded by Harvey, but a small American flag remained to remind residents that all was not lost and that Houston would remain strong. Photo courtesy of Revolution Messaging, Flickr.*

the 1940s to prevent flooding downstream along Buffalo Bayou. Although the reservoirs initially reduced bayou flooding, they now struggle after seventy years of development around them. During Hurricane Harvey, the pools reached elevations of 109.10 feet at Addicks and 101.56 at Barker, spilling into the surrounding neighborhoods, where over 10,000 homes are estimated to have flooded.¹³

Farther into upper Buffalo Bayou and Cane Island Branch, widespread flooding poured into the city of Katy, including homes that had never flooded before. Jane Wong and her family moved their furniture upstairs, but, after a foot of water “started coming in through the drain ... the walls ... and the floorboards,” they had to evacuate. Like many in West Houston, they discovered that their ninety-nine-house neighborhood “wasn’t meant to be developed” as it sat within an area of the reservoir that was intended to accommodate overflow. Homeowners in Wong’s neighborhood and farther upstream filed a lawsuit against the U.S. Army Corps of Engineers, which is responsible for impounding the water behind the reservoirs. On December 17, 2019, Senior Judge Charles Lettow ruled the Corps’s actions were liable for compensation.¹⁴

Despite the widespread discontent with spillage from the Addicks and Barker Dams, renovations to both have been in development by the Corps of Engineers since 2015. By 2019, it had nearly completed its \$75-million project to replace the dams’ gates. This will help ease pressure on the dams during flooding events; however, longer-term flood mitigation projects remain under consideration.¹⁵



The reflection pool at the San Jacinto Monument in La Porte along the Houston Ship Channel shows the extent of flooding from Harvey.

Photos courtesy of EarthCam.

LA PORTE

Recording the highest total rainfall in the Houston area with about forty inches, La Porte recorded 890 inundated homes. Located near the Little Cedar Bayou, Clear Creek watershed, Armand Bayou watershed, San Jacinto River, and Galveston Bay, La Porte is particularly susceptible to flooding. For lifetime resident Rhonda Davis, the “nightmare” began on the first morning of the hurricane. Her home flooded, and, though the water quickly receded, she lost much of her furniture to a horrendous smell. A year later, she still felt the “wrath of Harvey” when, for the first time, she had to have an exterminator come to her house due to an overwhelming number of bugs.¹⁶

In addition to residents’ immediate challenges, La Porte issued a shelter-in-place alert on August 28 due to a hydrogen chloride gas leak at Williams Midstream Services, Inc. Storm damage frequently compromises area plants, and this was one of eighty-nine similar incidents investigated in the Houston area, including a loss of refrigeration at the Arkema facility in Crosby resulting in a fire and a roof collapse at Baytown’s ExxonMobil facility.¹⁷

Despite the onslaught of issues faced in La Porte, Rhonda Davis believes the city “did a marvelous job.” The city’s app effectively allowed residents to receive alerts related to their unique circumstance, like those concerning the chemical leak, and in the aftermath, they had many opportunities “for volunteering, for donations ... and [for] helping people recuperate.” Davis concluded, “The relationships built because of [Hurricane Harvey] are going to be there now forever.”¹⁸

Just like the many storms that preceded it, Hurricane Harvey serves as a reminder of the destruction that weather can inflict on Houston’s communities. Every neighborhood in our 637-square-mile city faced its own challenges in returning to “normal” after this catastrophic event. Although flood mitigation efforts are underway, no regional strategy to control development appears to be in the works, leaving Houston’s neighborhoods nervous to see what the future holds.

Nadia Abouzir is a senior at the University of Houston majoring in history and anthropology. She has served as an intern at *Houston History* since the fall of 2019.



Looking Back: First Responders Reflect on Hurricane Harvey

By Graciela Cortez



Firefighters from HFD Station 49 conduct a rescue operation using a high-water vehicle in the Memorial area. Nathan Lilley stands in the front with Brandon Hernandez peeking out behind him. On the truck standing in front of the evacuees are, from left, Brian Dea, Dustin Davis, and Michael de Leon. Photo courtesy of HFD Station 49.

In times of crisis, we know the numbers to call. First responders work 24/7, rain or shine, to ensure the public's safety. Over time, the first responder network has evolved to serve the community in times of crisis. Although hurricanes and floods have plagued Houston since its founding in 1836, Hurricane Harvey was an unprecedented catastrophe that took some of the most seasoned professionals by surprise.

As Houston Fire Department (HFD) Station 8's firefighter and emergency medical technician (EMT) Thomas Wolcott affirmed, first responders always build on previous experience and aim to "prepare better for the next storm." Hurricane preparations begin long before an expected storm season. Dr. David Persse, physician director of HFD Emergency Medical Services (EMS) and the public health authority for the City of Houston, stated, "The biggest preventive measure we've done is the training that occurs during ... the off-season." Formal preparations include mock

drills, training, revision of emergency procedures, and determining evacuation routes. Additional measures involve ensuring that back-up generators are working, equipment is in the right place, and trucks are filled with gas.¹ The duration of emergency situations can never be predicted, so first responders must also arrange for the safety of their families while they are away on duty.

By the time Hurricane Harvey hit Houston, firefighters, EMTs, paramedics, police officers, and medical staff had done their best to prepare for its arrival. Yet, despite all the planning, Harvey's unprecedented rainfall did not allow for full preparation. HFD District 5's chief, Robert Branch, believes that "nothing could have prepared us for Harvey. ... The best-laid plans in any municipal emergency operation center couldn't have prepared [us] for that." Reports support that assessment: Southeast Texas received over fifty inches of rain, while some parts of Harris County received over forty inches during Harvey's five-day rainfall period. This storm exceeded the anticipated 500-year, four-day rainfall event by over nine inches.²

Arriving to their assigned stations and dispatch centers was the first hurdle for many responders. In some cases, like that of Captain Nathan Lilley, arriving at the station required maneuvering and improvisation; but for others, such as District Chief Edward Llewellyn, it was impossible. Capt. Lilley used a roundabout route to make it through flooded



Even during flooding events houses catch on fire and demand attention from first responders. Photo courtesy of HFD Station 49.

roadways to his team, but Chief Llewellyn was forced to turn around and regroup with a station closer to home. Both men were grateful to have found a way to report to work, though the heavy lifting was yet to come.³

Once in place, all first responders were in rescue mode. Command and staging areas coordinated with all assets to respond to the endless calls for help. Floods and hurricanes are dynamic phenomena, and our response networks have to roll with the punches. Capt. Lilley explained that during emergencies, responders do not know what to expect until they get there, and they must be flexible and resourceful when confronted with difficult situations.⁴

HFD paramedic James Sheffield, who is part of the Emergency Medical Task Force of Texas, knows a thing or two about improvisation and thinking outside the box. He managed a staging area at Tully Stadium on the outskirts of Houston. The original plan was to have 100 to 150 ambulances located in the field, ready to go, awaiting instructions. However, after a couple of hours, the number of vehicles more than doubled. Aside from the fact that the sudden increase of personnel strained resources like food and water, the rain threatened to flood the staging area, necessitating evacuation of the stadium. Sheffield compared the coordination of their exit to “a fire drill at an elementary school.” Everyone was worked up while waiting for directions. After a failed attempt to regroup in the Leonard E. Merrell Center, Sheffield had to improvise. With no place to settle the large number of staff and vehicles, he pulled into a new Buc-ee’s convenience store that had not yet opened for business and turned it into their new working space. Sheffield hunted down the manager and dispatched a National Guard high-water vehicle to bring him to the store, where the manager gladly welcomed the responders as the store’s first “customers” to aid the rescue efforts.⁵

HFD Station 49 members also employed unconventional measures while performing their duties. Despite the harmful substances in flood water, a firefighter dove underwater to connect a hose to a hydrant so they could battle a house



When resources run low firefighters demonstrate resourcefulness and ingenuity, such as using the motorized propellers on a boat to shoot water at a fire.
Photo courtesy of HFD Station 49.

fire. In another case where resources fell short, they worked with a volunteer group from the Austin Fire Department that used the propellers on their motorboat to shoot water at the flames. “That’s the nature of the fire service,” Chief Branch asserted, “We’re going to make it work no matter what.”⁶

Capt. Lilley echoes that sentiment. During the storm, he conducted a rescue involving a special needs child with autism and his family. Lilley’s team initially tried to evacuate them in the back of a dump truck, but the child refused to get in the truck. Aware of the “high-stress environment,” Lilley got a rescue boat to take the boy to the water’s edge to help ease his anxieties. Having two sons of his own with special needs, Capt. Lilley tried “to go the extra mile to get [that family] to where they need[ed] to be.”⁷ Luckily, the child really liked the boat and the responders were able to take the family to safety. Unexpected complications were not uncommon for responders during Hurricane Harvey, but many of them, quick to think on their feet, rose to the task.

Not every call was out of the ordinary, though. Dr. Persse pointed out that first responders “continue doing [their regular duties] as well as all of the disaster-related responsibilities that [they] acquire” in an event like Harvey. Regular calls do not stop. In addition to tending to flood rescues, responders took care of the “normal, everyday nine hundred to a thousand cardiac arrests, diabetic reactions,” and other conditions, “so everything was compounded.”⁸

Though emergency responders worked to address the challenges Harvey presented, some rescue efforts were unsuccessful. The evacuation efforts were overwhelming and the unpredictable events in the field presented tough problems to solve. Reflecting on how quickly the water level increased in the Memorial City area, Capt. Lilley described what they expected to be a typical EMS distress call from an older gentleman who needed oxygen. Upon arrival, though,



Dozens of ambulances and emergency vehicles gathered at the impromptu staging center at the Katy Buc-ee’s store that had yet to open to the public.
Photo courtesy of James Sheffield.

the EMTs discovered about a dozen elderly and disabled citizens sitting in three feet of water with no way to get out of their unregistered senior living home. The EMTs immediately mobilized to move as many people as possible to safety. However, the water had risen too fast, the facility did not have the necessary nursing capacity, and the residents could not get up to evacuate or get to a phone. Sadly, Lilley recalled, some passed away before anyone knew they were there, let alone that they needed help.⁹

First responders struggled to respond to everyone who needed help. Chief Llewellyn remembered receiving calls for help from all directions: the dispatcher, the station telephone, cellphones, walk-ins, Houston Police Department, and his personal line. Resources and staff were stretched thin. Some relief came when then Harris County judge Ed Emmett made an unprecedented call for civilian assistance. For responders, Chief Branch asserted, the “biggest thing that helped” was the support that immediately followed the judge’s announcement. People showed up at the fire stations with a variety of water vehicles ranging from “military truck[s] with a snorkel” to “inflatable boats [and] ... \$100,000-plus trophy bass boats.” Chief Llewellyn applauded all the civilians who risked their lives to help the community. The widespread influx of resources boosted the number of people first responders could assist, many of whom would have suffered otherwise.¹⁰



First responders from across the nation worked twelve to eighteen hour shifts and rested anywhere they could before reporting back to duty.

Photo courtesy of James Sheffield.

The dangers that come with working during a storm underscore the risks taken by first responders and civilian rescuers. The City of Houston acts preemptively by requesting first responders and other personnel be vaccinated against hepatitis and other diseases. Nevertheless, flesh eating bacteria, floating ant hills, live wires, and drowning hazards are just some of the life-threatening dangers that responders face serving the community.¹¹

To ensure that responders avoid unnecessary exposure to

harmful substances, the public is encouraged to comply with safety guidelines. Dr. Persse urges the community to avoid playing or travelling in flood water as much as possible, explaining, “Floodwater is dirty water. [The public] needs to think of it as raw sewage because that’s what a lot of it is.” Capt. Lilley reminds Houstonians to shut off utilities when requesting help during a flood or hurricane. Failing to turn off the electricity can increase the potential risk of electrocution for residents and rescuers. Station 49 firefighters/EMTs also stressed the importance of following shelter-in-place instructions. Some of the rescues made during Harvey were a result of people thinking they could make it across a flooded street or highway intersection after officials gave stay-at-home directions.¹² While first responders make every effort to protect the public, civilians should also do their part and follow recommendations that minimize risks to themselves and those they call for help.



HFD Station 49 firefighters assisted in the volunteer efforts set up at Memorial City Mall. Restaurants, civilians, and HFD provided food, essential clothing, and supplies to anyone in need.

Photo courtesy of HFD Station 49.

First responders demonstrated creativity and resourcefulness, doing everything they could to rise to the challenge presented by Harvey’s unprecedented rainfall. HFD Station 8’s Erica Czyz stated, “It’s part of the job. We know what we signed up for, and if we need to help [a] person, we’re going to do it.” When it came to finding new ways to help the community, no stone was left unturned; as a result, officials also turned to civilians who, Chief Llewellyn pointed out, “played a tremendous part in the rescue and evacuation” effort.¹³ As with many problems, it took a collaborative effort by the responders — public and private — to tackle the challenge.

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Disaster and Dedication: The Story of Meyerland's Jewish Community

By Anna Mayzenberg

"The synagogue where I was bar mitzvahed [in the 1960s] was basically destroyed by [Harvey]. They've torn it down now ... I visited Europe where my father was bar mitzvahed in 1920-something. That synagogue still stands, though it's a wreck after going through the war. ... The one where I studied is gone. And the elementary school that I went to is gone."¹
— David Lowy

In the mid-1950s, the 1,200-acre Meyerland subdivision promised to be a new suburban haven for middle- and upper-class Houstonians. The popular ranch-style houses and neighborhood amenities quickly attracted residents from other parts of Houston, and they started buying homes before construction even began. Houston's Jewish community, which dates to the 1840s, had previously relocated multiple times before settling down in Meyerland, with synagogues migrating to the new neighborhood along with their congregants, creating a place to call home.²

Meyerland was not a disaster-prone area when buyers first purchased houses there in 1955. When the flooding began, many residents had been there for nearly thirty years. Hydrologists and engineers told them that, because Houston expanded so quickly and without regulation in the 1970s and 1980s, the consequences, namely water runoff and constant flooding, were theirs to bear. While some neighbors left over time, the Jewish community — now approximately 14 percent of Meyerland's population — had firmly established itself in the area.³

Meyerland grew rapidly from its beginnings in 1955. Homes, such as this one on Valkeith Drive (1960), frequently sold before construction was completed.

Photo courtesy of the Houston Metropolitan Research Center, Houston Public Library, RGD0006-2585.

Since the 1980s, flooding in the Greater Meyerland area has gotten progressively worse, with the Memorial Day flood in 2015, the Tax Day flood in 2016, and Hurricane Harvey in 2017 leaving residents anxious and dismayed at the loss of community landmarks. Nevertheless, much of the Jewish community remains unwilling or unable to pick up and relocate. Not only is Meyerland a source of culture and purpose for Jews, but they have proven themselves to be valuable members of the community. Whether it be through synagogues or the Evelyn Rubenstein Jewish Community Center (JCC), the Jewish community has brought people together to provide service in an amazing and consistent way. Because their neighborhood became incredibly disaster-prone, multiple community organizations learned to provide help to everyone in times of need, as their faith and culture taught them to do and necessity demanded.

For many Jews, the kinship and shared culture that



Even as water receded, the Houston Fire Department conducted rescue operations in Meyerland.

Photo courtesy of Nomi Solomon.



permeates much of their community makes the thought of moving out of Meyerland unbearable. Community member Nirayl Cororve described observant Orthodox Jews, as required by their faith, to be “really traditional ... [O]n the Sabbath they walk — they don’t drive; their community’s very geared towards living with [their] neighbors and walking to people’s houses ... [and] being close knit, so being far away ... is not an option.”⁴ This necessity of being in close proximity to the Jewish community makes moving away challenging, even in response to a natural disaster.

The difficulties arise not only from physical distance but emotional as well. Renee Cohen, who is an Orthodox Jew, explained that, for her, Judaism is not simply a religion. “We do so much Jewishly,” she added, “like every minute of our lives ... I don’t think of the Jewish community as a place to do Jewish stuff. ... It is part of the structure of our day, from the time we wake up to the time we go to sleep.” She wants her children to grow up in an environment where they feel “like they’re part of something” because, at some point, they will become the “other.” She knows from experience that being the only Jewish person in a group or having to constantly be the lone representative for Jews in other communities can be overwhelming. In addition, some parents want their children to grow up seeing the diversity of the Jewish community or to have the same rabbi walk them through all of their different stages of life.⁵ Whatever it may be that brings the Jewish community together in Meyerland, it is not going away.

Those who do leave their place of comfort risk regretting it later. Eyal Enav, who immigrated from Israel to Houston, spoke about his experiences: “We heard stories of other people that decided to move away ... They were basically

disconnected ... they were sorry that they made the move.” Barbara Marcus, who chose to move, returns for things she cannot replace: “I’ve been trying to find a place to get my hair done. ... I never have found any place that I like as much as the little place [in Meyerland]. ... I go back to the [JCC] for different events. I miss those, too.”⁶ The personality and richness of culture in Meyerland are distinct and irreplaceable, even when one feels they cannot stay.

While residents find it difficult to leave the Jewish community behind, Hurricane Harvey also made it difficult to stay. The JCC and synagogues, the anchors of the community, were drastically affected in unprecedented ways. Rabbi Jill Levy, the director of Jewish Living and Learning at the JCC at the time, indicated that Harvey’s flooding reached a new high point with ten feet of water in the building’s lower level, leaving its detached tennis center as the only accessible building. Congregation Brith Shalom’s Rabbi Ranon Teller pointed out that his synagogue’s “closest synagogue partner, [Congregation] Beth Yeshurun ... flooded badly. Most of their rabbis’ homes flooded ... and the ... United Orthodox Synagogue flooded badly again, for the fourth time.” Yet, neither rabbi’s tale ended there.⁷

The Jewish community aimed to recover at full speed, stepping up to ensure that Greater Meyerland had the most efficient possible response to flooding. With only the tennis center available, the JCC still managed to aid Greater Meyerland and Southwest Houston. Immediately, the staff held phone meetings and divided up all the tasks they could do to help. The tennis center became a base for distributing supplies and, later, a preschool. Rabbi Levy even “worked on the national gift card drive to ... give that cash in hand to people as they needed it.”⁸

Rabbi Shlomo Litvin of Kentucky with Chabad-Lubavitch surveys the damage at United Orthodox Synagogue after helping remove damaged holy items. The synagogue, where David Lowy was bar mitzvahed, was torn down and is being rebuilt.

Photo courtesy of Chabad of Texas Archive.



Brith Shalom similarly refused to quit when faced with tragedy, offering Beth Yeshurun a place to worship, although Teller admits “it was a challenge to match up the two [synagogue] cultures.” Both are Conservative congregations, but Beth Yeshurun’s membership is more than double Brith Shalom’s, which alters how congregants interact with their peers and their rabbi. Nevertheless, Brith Shalom was up and running within a week and immediately willing to extend that generosity. Beyond that, the synagogue’s leadership “asked people to show up in the morning and then [organized] them into teams and [sent] them out to a home.” Although Rabbi Teller described the situation as “horrifying, devastating, and tragic,” it was also “inspiring to see people’s willingness to get in there, sometimes at their own detriment, because there was toxic water and manual labor.”⁹



Rabbi Avrohom Litvin of Kentucky (left) and Rabbi Yossi Serebryanski of Colorado examine Torah scrolls rescued from the chapel of Seven Acres, a local Jewish assisted living facility. They are two of fifty Chabad rabbis who volunteered to assist with the relief effort in Houston after Hurricane Harvey. Photo courtesy of Chabad of Texas Archive.

The recovery process went beyond simply handing out money and mucking out people’s homes. University of Houston professor Irving Rothman, z”l, mentioned the need to recover scrolls of the Torah with the Five Books of Moses, “Members of our congregation went in waist deep and carried them out in plastic bags and took them to their houses.” Not everything could be saved, of course. “But there are thousands of thousands of books,” he continued. “You’re not allowed to burn Jewish books, so there’s a large, large ... grave, dug outside of the synagogue in an earthen work. All the books that were flooded were ... buried [there]. Because a book is a live thing. You don’t burn it, you bury it.”¹⁰ The commitment to Judaism and the community stands out in these stories; Jews will risk their lives to tread through murky waters and salvage the texts that guide them, and they will respect those left behind.



In need of boxes to pack up things that survived the flood, Meyerland resident Renee Cohen visited the operations center for Chabad Harvey Relief. Her van survived because Torah Day School opened its elevated parking area to prevent cars from flooding.

Photo courtesy of Chabad of Texas Archive.

Jewish culture also provides support to community members, from remembering to do the little things to lifting people up emotionally. Renee Cohen recalled the things that the Torah Day School mothers provided her family, saying, “Someone packed snacks for my

kids when school started up. Someone was in charge of their lunches. They had new backpacks and new lunch bags.” These acts of kindness minimized the loss that Cohen’s children had to endure after the storm.¹¹

Doris Yudelevich, a Chilean Jewish immigrant said, “[I] didn’t leave home for ten days to have to buy something; boxes and crates of water would arrive.” On Thursdays, people brought her Jewish braided bread, called challah, so that she could have it on the Sabbath Friday and not lose that custom.¹² Jewish community members were picking up the slack where residents simply could not, emotionally and physically, allowing them to process and recover as best as they could.

What is it that propels both the Jewish flood survivors and volunteers to provide aid during these crises? Religion has a great deal of influence. Rabbi Teller and Brian Cororve, a Jewish Meyerland resident and estate attorney, discussed the way that their faith impacted their responses to the flood. “At some point I felt assured that I had done as much as I could,” Rabbi Teller said, adding, “I think that was a key to my religious philosophy, which is that humans have agency. That we are empowered to work this world in God’s image, and not rely on God to do everything. ... After you have done all that you can do, then the rest is in God’s hands. But not before.” Rabbi Teller’s faith pushed him forward to exhaust every option he had in terms of helping people and helping himself. Brian Cororve, who is Nirayl’s husband, was encouraged by his faith as well, indicating how Judaism helped his mental state more than anything else. “Because of tradition and ritual,” he said, “there are certain things that made you realize that life goes on and things just keep moving forward, and that’s what you have to do too.”¹³ Judaism’s impact ranged from encouraging



Rabbi Ranon Teller.

Photo courtesy of Congregation Brith Shalom.

Jewish community members to aid those in need to being a source of stability for its members; their faith never failed to support the recovery of Meyerland.

After all was said and done, as hefty as recovery efforts were, Harvey still damaged Meyerland's Jewish community. Synagogues grew smaller, and some Jews could not handle experiencing this type of heartbreak and disaster again. Doris Yudelevich explained that when she talks to people from outside Houston, they tell her, "You have a community that doesn't exist elsewhere." Doris agrees that the Jewish community is "very concentrated in the zone of Bellaire and Meyerland," but "a consequence of Harvey is that people have spread out, which is the sad part because [before], you felt that you had support, that you lived within something important."¹⁴



In stark contrast to the beautiful neighborhood, streets were lined with the remnants of flooded homes after Harvey.

Photo courtesy of Revolution Messaging, Flickr.*

For some residents, three floods in three years was enough, but for others it strengthened their community ties. After Harvey, Renee Cohen observed that her synagogue, Meyerland Minyan, shrunk more than it had in 2015 and 2016, explaining, "With those first floods, there were really only a few families affected. So, it didn't really shake the shul in the same way. This time ... it was so many [people] ... It is really small now, and it is sad to see because it is such a special place and there is so much learning going on there, and growth, and it is just so small now." Nevertheless, Harvey managed to bring the community together emotionally as much as it spread them apart physically. Nirayl Cororve pointed out that the Jewish community's strength was boosted by this experience, forcing them to fight for what they had. She asserted that "the coming together of the community and really saying, 'these are important things to us ... we're going to preserve them,'" was "a positive ... People have realized the value in all of these [community] places, and they're not going anywhere."¹⁵

Brith Shalom and Beth Yeshurun synagogues similarly found hope and community within one another, with Brith



Meyerland resident Nirayl Cororve walks through the flood waters by her home. In the midst of disaster, she found strength in her community.

Photo courtesy of the Cororve family.

Shalom holding a bat mitzvah for a Beth Yeshurun family. Rabbi Teller described it as honoring "a sweet young woman with a beautiful voice [chokes up] — that hits an emotional button. We invited them to have their bat mitzvah with us, in our sanctuary. ... It couldn't have been more beautiful. They had friends and family from out of town come in with all this gratitude, energy, and love. I was deeply grateful to be a part of that experience."¹⁶ This bat mitzvah was the light at the end of a long, grueling tunnel of recovery, and it solidified the Jewish bond between the two synagogues more than ever before.

The Greater Meyerland Jewish community is as committed to its neighborhood today as it was when it first put down roots there in 1955. Some people are hopeful that large-scale flooding will not happen again; others, like Nomi Solomon, are skeptical, despite "a big movement within the community just about the safety and security and the future." Regardless, the neighborhood is filled with loyal mom-and-pop businesses, such as Three Brother's Bakery, which, the *Houston Chronicle* reported, "has now flooded three times too, and they're still staying put ... There is a commitment to the area." A new H-E-B has opened with a 95,000-square-foot building and a massive kosher section, filling the place of Belden's, a Jewish grocery store that closed its doors after Harvey.¹⁷ No matter what comes, it seems, the Jewish community of Meyerland refuses to quit on its neighborhood.

*We come with our community. We stay with our community.
We seek our community.*¹⁸

— Nomi Solomon

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Connecting Through Chaos: How Social Media Platforms Helped Save Lives

By Syed Shahzeb Ayaz

During catastrophes, people turn to first responders and disaster relief organizations for safety and assistance. Volunteer organizations, evacuees, local businesses, and regular people also play prominent roles in aid efforts. During Hurricane Harvey, however, a new phenomenon emerged that helped shape the reaction to the storm — social media. As of January 2020, an estimated 230 million Americans use social media, and out of those, 225.4 million are active on it via their mobile devices.¹ Throughout Harvey its multifaceted capabilities served as a medium for communication, news outlet, and safety network that demonstrated how social media has become an essential tool that should not be overlooked following this historic, yet saddening, moment.

When analyzing social media, the most logical starting point has to be the ubiquitous Facebook, with its 2.6 billion users worldwide. Although it was originally designed for college students, Facebook's influence has expanded exponentially, with hundreds of millions of users in the United States, and tens of millions in Texas.² These users include individuals, businesses, and various organizations from schools to nonprofits to neighborhood, faith, and political groups.

Facebook emerged as a platform that many storm survivors relied upon for communication, help, and information — as participants in the Resilient Houston: Documenting Hurricane Harvey project attested. Ana Vazao, a school

counselor in Houston, recalled the community spirit it fostered. “Facebook was wonderful,” she explained, adding, “they would tell you [about] resources. If you need cleaning products, go here. If you need this, go here.” Brian Cororve, an estate attorney and Meyerland resident, discussed how his community stayed connected with social media, noting “Facebook was a big resource for sharing information, and Meyerland had a Facebook group for people who flooded.”³ The platform was important to other neighborhoods as well and provided a safety check-in function so that friends and family could update one another.

Rabbi Jill Levy, director of Jewish Living and Learning at the Evelyn Rubenstein Jewish Community Center (JCC) during Harvey, used Facebook to organize donations and other support via her organization. She contacted JCC branches around the country via email to notify them of local needs and how to filter donations. The local JCC administration then established a Facebook page that clarified what it needed most for the donors' consideration when choosing what to bring. “Facebook just makes everything go really quickly,” Levy explained.⁴

Renee Cohen utilized Facebook a great deal when her Meyerland home flooded. Shortly before the storm, Cohen posted on Facebook, “Where could we park our cars?” in hopes of finding high ground to protect her vehicles. She



Using social media to locate those in need and dispatch volunteers to assist them, Mrs. Gitty Francis (far right), along with her volunteer staff, ran the Hurricane Harvey relief operations of Chabad-Lubavitch, a worldwide Jewish movement with a focus on outreach activities.

Photo courtesy of Chabad of Texas Archive.



When people lost their family's necessities, those who could offered relief, often matching up through social media.

Photo courtesy of Revolution Messaging, Flickr.*

learned that the administrator at her children's school had offered its elevated parking lot as a safe location, which protected Cohen's cars from Harvey. She also recalled her stressful experience at the George R. Brown Convention Center, which the city opened as a shelter. Concerned for her family's safety, she posted on Facebook, "We're at George R. Brown, can anyone come to get us?" A friend responded, picked up the Cohens, and brought them to her home. Despite the storm's unpleasant circumstances, Cohen was overwhelmingly positive about the support received from her community via social media. She recalled, "I had put up a picture on Facebook of the baby's changing table on the front lawn with all the garbage and within minutes someone sent a message" saying they had one for her. Facebook helped guide people through the preparation, experience, and aftermath of Harvey, and showed Cohen the depth of support that community members had for one another.⁵

Although Facebook ranked as the most active platform

by the Resilient Houston interviewees who discussed social media, other social media platforms were equally important to those who used them. Mrs. Chiena Lazaroff, head of the school where Cohen parked her car, created a WhatsApp group to get the word out about access to the parking lot. Similarly, Secunda Joseph and Brandi Holmes, community organizers affiliated with Black Lives Matter-Houston and Project Curate, a nonprofit group dedicated to issues of intersectionality, inequality, and injustice, spoke about their experience using the voice and video chat app, Discord. As posts emerged on the app, it became evident people in certain zip codes were underserved, and the app enabled Joseph, Holmes, and others to find folks who needed assistance. Joseph extolled the impact of social media upon their organizing efforts, saying, "That social media piece and that Discord app and just people who were engaged all over — and with texts and everything else, that saved people's lives."⁶

In Katy, University of Houston student Jane Wong recorded her evacuation experience on Snapchat, a mobile app and service for sharing photos, videos, and messages. A group of volunteers evacuated Wong and her family out of their home; she vividly remembers the view through her doorway — a torrent of water where her street should have been. A friend of Wong's saw her Snapchat video and recognized the man who was evacuating Jane as the same man who rescued her the day before, part of a group of volunteers from Dallas that had answered the call for help and worked their way through the neighborhood.

Following Hurricane Harvey, recovery efforts flourished through social media. After his vehicle flooded, Irving Rothman, z"l, an English professor at the University of Houston, traveled by Uber, a multinational ride-hailing company offering services that include peer-to-peer ride-sharing, food delivery, and a micro-mobility system with electric bikes and scooters. Rothman used Uber consistently to get to work and other places; he described the experience



Jane Wong used Snapchat to video men from Dallas who conducted rescues in her Katy neighborhood where every home flooded.

Photo courtesy of Jane Wong.



Irving Rothman, z"l, was an active congregant of Beth Yeshurun, a synagogue in Meyerland which received over six feet of water.

Photo courtesy of the University of Houston.

as convenient, and he appreciated the app's economic value. "From September to December, the cost of Uber for me was about \$1,300 [\$325 per month]. Over a year that would add up to about \$3,900, which is still less than buying a new car, doing repairs. Tires alone on a new car cost about \$1,200."⁷

Amy Zachmeyer and the Democratic Socialists of America (DSA) raised funds for hurricane relief through YouCaring, a now-defunct American crowdfunding website that allowed users to raise money for charitable causes.

Zachmeyer was surprised and thrilled the page drew a large amount of traffic, exclaiming, "All of the sudden, we [had] \$120,000." On the advice of a colleague in Oklahoma, DSA initially handed out gift cards so people could get whatever they needed instead of providing the typical water and canned foods. Zachmeyer also mentioned the use of GoogleForms as another online tool that augmented their efforts to distribute aid.⁸

Any dive into social media would be remiss without mentioning Twitter, which has become an essential platform for online discourse for everyone, from kids to the President of the United States. The Kinder Institute for Urban Research, a Rice University-based "think-and-do tank," conducted a study that suggests Twitter can be a valuable resource for rescuers and officials who are trying to organize a disaster response.⁹ Though Twitter may not present an accurate demographic picture, the real-time nature of the tweets is a useful augmentation to other sources of data that allow rescuers and administrators to pinpoint regions that are bucking a trend or need immediate help.

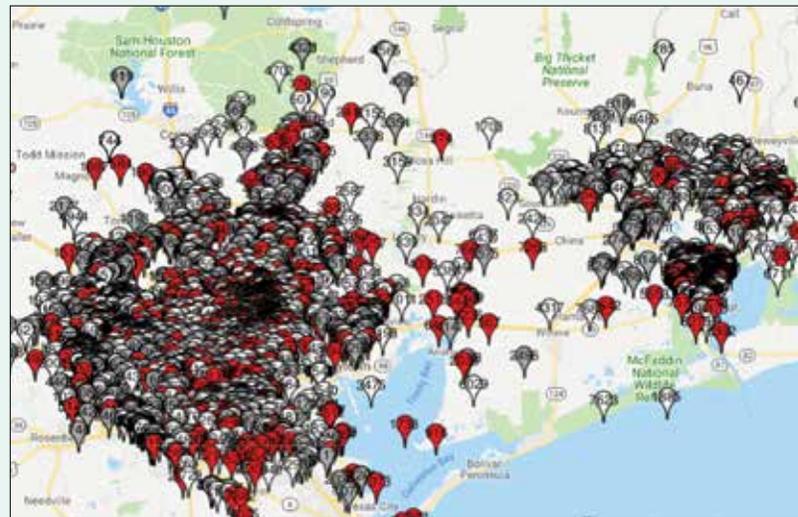
As mentioned, Twitter, like all social media, is not a one-to-one demographic match with the general population. Many different groups, particularly those for whom English is not their first language, use other apps more heavily, especially apps that allow free international calling to stay in touch with friends and family abroad. WhatsApp is a free texting and calling replacement with over one billion users worldwide, with many of them in Latin America, Africa, India, or Europe. WhatsApp helped the Houston Desi Friends, an Indian American WhatsApp group, to mobilize and deliver food to Harvey victims. WeChat is another app, similar in function to WhatsApp, which also boasts more than a billion users, and is popular both in China (where it is based) and among the Chinese immigrant community in the United States. The Chinese American community, spearheaded by the Chinese Consulate in Houston, used WeChat to organize rescues, salvage property, and combat misinfor-

mation during Harvey.¹⁰

Hurricane Harvey was the first major storm to hit Texas in the age of social media. The social media phenomenon illustrates a stark contrast in the reaction to Harvey and the reaction to past storms. Facebook was first pitched to the general public in 2006, two years before Hurricane Ike hit Houston. At the time Facebook was still in its relative infancy and could not yet support widespread relief efforts. As the development of Facebook and other social media progressed, the number of Americans using those platforms increased significantly and across many demographics. This led to a massive increase in the sophistication of support networks and communication.

Social media is not, however, furnished exclusively by large corporations. Social media developers Matthew Marchetti and Nate Larson developed an app called CrowdSource Rescue to connect people who need help with local volunteers who could provide it. During Harvey, the app helped coordinate the rescues of roughly 25,000 people.¹¹ CrowdSource Rescue's efforts did not stop with Hurricane Harvey. Since then, the developers have been actively tailoring the app to facilitate support during the 2020 COVID-19 pandemic as well.

Harvey was one of the first experiments combining disas-



CrowdSource Rescue helped mobilize over 8,000 volunteer rescuers within a matter of hours after Hurricane Harvey. Not only did this reduce the strain on overburdened 9-1-1 services but the data is also being used to improve the response to future disasters.

Photo courtesy of CrowdSource Rescue.

ter with social media, but it almost certainly will not be the last. Social media has profoundly and irreversibly changed the way that we react to disasters and other events affecting society. Thanks to its ubiquity, its accessibility, and its lightning-fast response time, the use of social media will likely continue to be of critical importance in future storms.

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Houston's Democratic Socialists of America chapter came together to help Houstonians after Hurricane Harvey. The volunteers helped out in people's homes and raised money, which they used for cash cards to help those in need.

All photos courtesy of the Houston Democratic Socialists of America Facebook Group unless otherwise noted.

Activism After Harvey: The Democratic Socialists of America Respond to the Storm

By Christopher Kessinger

Before Hurricane Harvey made landfall, Houston Democratic Socialists of America (DSA) chairs Amy Zachmeyer and Nick Bunce began to consider the organization's next move. They started a fundraising effort on the now-defunct website YouCaring, hoping to raise a few thousand dollars to buy supplies to distribute to the hardest-hit. With the storm still pouring trillions of gallons of rainwater over Houston, they found themselves with an unexpected problem: the fundraiser was a massive success. All in all, they raised over \$120,000, far more money than they knew how to distribute. "We start[ed] panicking because our treasurer had just been using their personal bank account to cash out stuff in the past. We had raised, like, \$300 here and \$200 there — you know, small amounts of money," Zachmeyer explained. Before they could even touch the money, the small political activist group had to legally incorporate. One of their members was a lawyer, and he filed the necessary

paperwork online.¹ That was the easy part. As the storm finally departed the region, they had to find a way to put that money to use.

Zachmeyer and Bunce contacted a member of the DSA's Oklahoma City chapter who worked in disaster relief. Charitable organizations would already be inundated with donations of food, water, and clothing, he told them; buying more would be a waste. People have individualized needs — everything from medication to car repairs — that charities do not provide because it is hard to purchase those things in bulk. The financial burden for these items remains on the storm survivors, so what they needed most was money.²

The DSA had a three-part plan to help Houstonians. The first step they took was to purchase prepaid cash cards, after which they distributed them \$200 at a time to anyone who asked. That was not much per person, but it added up quickly. Zachmeyer pointed out, "We didn't have enough money to furnish entire homes. We would have helped three people if we had done that. So instead, we decided to spend smaller amounts."³ They made specific purchases for a few individuals — a mattress here, a child's car seat there — that would not be covered by the \$200 card, but on the whole, they found that people knew what they needed, and a lack of money was their only obstacle.

The DSA found that people had trouble accepting the idea that the money was free, with no means-testing. "People aren't used to receiving aid just because they need it. They're used to having to prove that they need it," Zachmeyer said. "They would want to tell you what had happened and why



During Harvey, Amy Zachmeyer worked with the Communication Workers of America as an organizer for the Texas State Employees Union. Today she works full time for the Democratic Socialists of America.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.

they really needed it because they felt guilty taking aid even though they were in great need.” They were worried that they would be denied unless they sufficiently proved they had been harmed by the storm. They shared their stories with her, which began to take a psychological toll. Another volunteer, visiting from the DSA’s Chicago chapter, was a social worker, and she saw signs of vicarious traumatization in Zachmeyer, who was forced to take a break from the work, though she eventually returned to it.⁴

Zachmeyer and Bunce were also concerned about the effects Harvey would have on undocumented immigrants, and the second point of the response was meant to assist them. “There [were] rumors of ICE and Border Patrol coming around to shelters and donation points and targeting undocumented folks,” said Bunce, “and obviously this put a lot of fear into the undocumented community.” However, most of the Houston DSA only spoke English and, thus, had little opportunity to make direct contacts with undocumented people. They got in touch with a local organization that works with the undocumented, and at the first post-Harvey meeting of the Houston DSA’s general body they advanced a proposal to donate \$30,000 to that organization, which overwhelmingly passed.⁵

The third and final part of the DSA’s relief plan was direct labor. After purchasing tools and supplies, volunteer teams went out every weekend — and some weekdays — to perform muck and gut work on the homes of anyone who asked for help. They were joined by DSA members from around the country.⁶

Zachmeyer and Bunce were lucky enough to avoid the direct effects of the storm, but through their muck and gut work they saw its devastation firsthand. One of the first people Zachmeyer helped was a member of her union. His home “was already in really bad condition before [Harvey] happened.” It had flooded during Tropical Storm Allison

in 2001, and he had never been able to get it adequately repaired. He had hired someone at the time, but they did a substandard job, leaving him with no choice but to live with it. Zachmeyer was horrified at what she called “disaster capitalism.” The DSA did the best it could to restore his home to livable condition.⁷

The house next door to that one also left an impression on Zachmeyer. It was a rental, so the DSA had less legal latitude to work on it directly, but they tried to help the family — multiple adult siblings and their elderly mother — as best they could. One sibling had breathing difficulties before the home flooded, and now the mold was making things worse for him. Despite this, he refused to go to a shelter, citing how traumatic it was when he lived in one after Hurricane Katrina. Bunce was also affected by what he observed. “Before the storm [people] were already on the edge, and then the storm came and just threw them over.” He remembered an elderly woman who suffered roof damage during the storm. Her home was already in bad shape, and now she had no place to sleep.⁸

The relatively small, all-volunteer membership of the Houston DSA was limited in what they could do. “We’re not contractors. We also don’t have a full-time team like other organizations do,” Bunce pointed out. Many of those who had specialty skills went to work with other organizations. All in all, Bunce and Zachmeyer said, they did what they could with the skills and resources they had.⁹

As time passed, it became harder for them to find people in need of their help. Though the city’s recovery was far from complete, the DSA’s limited presence in Houston meant that they eventually ran out of people who knew about them. In early 2019, about a year and a half after Hurricane Harvey, the Houston DSA officially shuttered its muck and gut program. The tools and the truck were donated to individuals in need.¹⁰

Both Zachmeyer and Bunce noted that this relief work came with an opportunity cost; as Zachmeyer put it, “Before [Harvey], we had been working on Medicare for All. ... Whenever we would do a Medicare for All canvas, members would have to choose, ‘Do I want to go do muck and gut? Or do I want to go do a Medicare for All canvas?’”¹¹ They both also expressed regret that they did not use it as a springboard for a political education campaign. Nevertheless, both were proud of what they accomplished.

In the wake of Hurricane Harvey, people across Houston found ways they could aid the people around them. Political activists and community organizers were no exception. Like churches or charities, they saw reaching out as part of their mission — a chance to put their ideals into practice. Though they were never on the front page of a newspaper nor mentioned on the evening news, they did their best to aid their city.

Christopher Kessinger graduated *cum laude* from the University of Houston in 2020 with a B.A. in English and a minor in history. An intern with *Houston History*, he plans to attend graduate school.



Houston DSA completed the muck and gut work so homeowners could begin repairs.

Beyond Social Justice: Black Lives Matter and Houston Relief Efforts

By Christopher Kessinger

Activists with Black Lives Matter-Houston and Project Curate, Brandi Holmes and Secunda Joseph formulated their own responses to Hurricane Harvey. The two began using social media — most notably the chat platform Discord — to coordinate a response during the storm. While the floodwaters still rose, they joined a Discord server that acted as a dispatch service for civilian rescue efforts. They were particularly motivated to help by the lack of resources allocated to Northeast Houston. “People I knew were stuck,” said Joseph. People sent SOS messages, and it was up to Holmes, Joseph, and others like them to ensure that a rescuer was sent to their location. The process quickly grew in scale. “It even became where [we] were like on shifts,” Holmes explained. She felt a moral duty to participate. “My faith practice doesn’t allow me to turn a blind eye to somebody in need.”¹

Once the waters had receded to the point that they could drive to the George R. Brown Convention Center, which the city opened as a shelter, they went to volunteer there in person. It was far from perfect. “[We saw] a lot of black and brown people there,” Joseph observed, and the two women were horrified at the way the media treated the evacuees as a spectacle. Holmes and Joseph saw reporters shoving microphones into the faces of people stepping off the bus, trying to get an immediate story rather than respecting their privacy in a traumatic situation. They also found that donors and volunteers, though well-intentioned, often failed to meet the needs of the people they were trying to help. Their time as



Brandi Holmes and Secunda Joseph spoke to Houston History about what motivated them to help those in need during Hurricane Harvey.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.

organizers had taught them the importance of listening to the community directly. “We’re not saviors for a neighborhood. I don’t have all the answers,” said Holmes. Instead of making assumptions, they tried to talk with the people they were helping.²

The efforts of activists like Holmes and Joseph were not well-publicized, either. A hoax website put out a piece claiming that Black Lives Matter activists in Houston were blocking ambulances from helping people; some smaller right-wing websites picked it up and presented it as a real story. Within a few days, the articles had been shared to a Facebook audience of over twelve million viewers.³ The lie got far more attention than the real work that Houston activists were doing to help their neighbors in need.

The two Black Lives Matter activists saw the post-Harvey devastation as emblematic of the injustices they struggled to correct. “Even the way people were picked up and where they were dropped off was different, right? The separation of who goes to what shelter, right? And then, not only that, the things that were set up at particular shelters [were unequal],” Joseph asserted. They saw Houston’s black community inordinately harmed by Harvey, to the point that many people were still trying to deal with the consequences of the storm more than a year afterwards. They saw their inter-



News crews set up outside of the George R. Brown Convention Center shelter. Brandi Holmes and Secunda Joseph noted that reporters were insensitive to the stress and needs of evacuees, pushing to get an interview the moment evacuees arrived, which added to their distress.

Photo courtesy of Diana J. Rodriguez.

Documenting Hurricane Harvey as part of their project — they wanted to make “enough noise to where these folks can get help.”⁴

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The scene outside the Slagles' home (center) shows the water line near the top of their garage door; just beyond their house, a car is completely submerged. Wakes from rescue boats launched at the intersection pushed another foot of water into the Slagles' home. Photo courtesy of Debbie Z. Harwell.

Straight from the Horse's Mouth: Hurricane Harvey Through the Eyes of Houstonians

By Andrew Davis

The scale of Hurricane Harvey was unfathomable. Between the nationwide volunteer efforts, the overtaxed first responders, the drone footage of I-10 looking like the Mighty Mississippi, and the sense that it affected everyone, the storm's vast impact remains incomprehensible.

Reflecting on those heady days, one of the best ways to understand what Harvey meant to Houston is to see it through the eyes of Houstonians. The several participants profiled here took part in the Resilient Houston: Documenting Hurricane Harvey project, sharing their thoughts, their feelings, and their stories about how they survived the hurricane's onslaught.

Tom and Lisa Slagle — Retired Firefighters from Kingwood¹

When floodwater begins to threaten homes and lives, many people have no experience or plan for such a situation — they might even panic; but not Tom and Lisa Slagle. They have a combined fifty-six years of experience as firefighters and EMTs, retiring in 2014 after distinguished careers. As first responders with the Houston Fire Department (HFD), they have extensive disaster training.

In August 2017, as Lisa and Tom enjoyed retirement in their tranquil Kingwood neighborhood, meteorologists predicted that then Tropical Storm Harvey was gaining strength and would impact Southeast Texas. Their experience as first responders allowed them to formulate a plan of action; but seeing as they were on the civilian side of the disaster, could that plan withstand five feet of floodwater flowing freely through their family home?



Lisa and Tom Slagle also participated in an interview for Houston's First Baptist Church at HFD Station 6, where the couple worked for many years.

Photo courtesy of Houston First Baptist Church.

Tom: “[We were saying], ‘okay, this is bigger than us, and we’re going to have to be on the receiving end’ ... Even though we’ve experienced and seen and dealt with a lot of what we’re dealing with, it was in a completely different perspective.”

As one might expect, Lisa and Tom prepared for the storm. They had food, gas, and a generator to keep their phones charged and refrigerator running if they lost power. They had friends to help them move furniture and a support network of first responders who cared about them. Based on their experiences with Hurricane Alicia, Tropical Storm Allison, and Hurricane Ike, the Slagles reckoned that they could deal with Harvey's consequences.

Lisa: *"We were prepared to be without power for at least a couple weeks and had all the food and things that we thought we were going to need. When you have five feet of water in your home, none of that matter[s] because all of it was destroyed."*

At 1:03 a.m., the Slagles were dismayed to find water seeping underneath their front door. Lisa thought, "Okay, it's going to stop." Less than two hours later, the water had climbed to the fifth step of their stairwell and showed no signs of slowing down.

Lisa: *"Tom was saying that we felt like our lives were going to be in danger — because you didn't know how much more water was going to come. It could have overtaken the whole house, upstairs and all. You just have to get into a different mindset about that."*

Though their training assuaged their anxieties somewhat and helped keep things in perspective, the rest of the night was a nerve-wracking experience.



The Slagles' kitchen.

Photo courtesy of Tom and Lisa Slagle.

Lisa: *"We could hear noises ... We'd go down and check. One time ... [we] hear[d] a big crash ... and we said, 'Oh, it's the water line for the refrigerator — the ice maker.' Well, it's spraying everything in the kitchen ... the line's just going crazy. I've got the flashlight in my mouth. I'm climbing over the island in the kitchen, trying to get behind the refrigerator, which had floated up and wedged itself between the island and the wall and the garage doorknob ... I'm trying to reach over the top of it just to turn the water off. And I said, 'I can't reach it.' He's like, 'Yes, you can.'"*

Tom and Lisa received a cascade of phone calls from friends and family concerned about their welfare, offering to help them evacuate. The Slagles initially rebuffed the offers, confident that their preparation and training would see them through the crisis. They found it difficult to put themselves in the mindset of rescuees. When Jimmy, a firefighter comrade, arrived with a boat to rescue them, the couple told him, "We're fine." But Jimmy refused to take no for an answer and brought the Slagles and their three cats to his house.

The Slagles' home was completely destroyed — including the furniture that they had raised onto counters, which were not high enough to escape the deluge. The active and engaged mindset (and probably adrenaline) that carried Tom

and Lisa through the worst of the storm inevitably gave way to the crushing reality of losing their home and possessions, and the eighteen-month-long road ahead to rebuild.

Lisa: *"I can honestly say I don't think I would do this again. I don't. And we have a lovely home, and it's going to be beautiful when we get back."* — October 2018

Wayne Wilden — Warehouse Owner; Zack Harvey & Kris Petrosky, Wayne's Tenants²

Just east of downtown stands a grove of bohemian splendor, where the rent is cheap and noise complaints are non-existent. The Warehouse District's eponymous warehouses have mostly been converted to lofts, where they attract a diverse smattering of artists, musicians, and other libertines who flock to the area's concert halls and art galleries. Hurricane Harvey disrupted this lifestyle when it caused Buffalo Bayou to overflow and envelop the neighborhood. The unique culture and history of one century-old warehouse provides a distinctive lens through which to view the storm's impact.



Water rose around Wayne Wilden's hundred-year-old warehouse, now converted to apartments, during Hurricane Harvey. The stairs leading up to the Starry Night-inspired façade are completely submerged.

Photo courtesy of Wayne Wilden.

Wayne Wilden, having grown up in Houston, had weathered hurricanes before, saying, "I have a theory that if you live in Houston long enough, you start to tell time by when the last hurricane was." Wayne mentioned his parents discussing the 1961 storm, Hurricane Carla, like "an aunt I once had."

In 2001, Wayne lived in the warehouse as a tenant when Tropical Storm Allison drenched the city with over two feet of water. The owner had no interest in starting an expensive renovation, so he planned to sell. Wayne had grown to love his home, where he had constructed his own theater. Faced with losing the space, he purchased the damaged building, planning to do the renovations himself. So in a strange twist of fate, Wayne's relationship with the warehouse is intimately tied to Houston's storm history.

Zack Harvey also has an interesting relationship with hurricanes. A musician, Zack hails from New Orleans and came to Houston as a Hurricane Katrina evacuee in 2005.



The damage was extreme, with four feet of water inside, drenching even what had been elevated on a platform. The roof also collapsed in multiple places. The foul, murky water that flowed throughout the building's ten units smelled of sewage and left an oily film on everything it touched.

Photo courtesy of Wayne Wilden.

Upon hearing Harvey was headed for Houston, Zack said, “[W]hen I hear anything past Category 3, [I have] got to take it seriously. Katrina was devastating, they still haven’t recovered.”

Kris Petrosky, originally from Michigan, runs a small business that rents staging and audio/video equipment in the building. He recalled their preparations, “Because of the past storms, we knew there was high potential that it would flood. But ... we didn’t ever think it would be as bad as it was.” Kris brought in a three-foot-high platform upon which they piled valuables, including lighting, music production equipment, and an old Hammond organ. Although he felt comfortable this would get them through the storm, it was not enough.



Wayne inspects the damage to his property, gesturing at the water line in one of the tenant’s rooms among the debris.

Photo courtesy of Wayne Wilden.

Zack and Kris evacuated, but Wayne stayed to watch over his building. As water pooled in the streets and seeped through the door, Wayne described it as feeling like “watching a slow-motion car crash where you’re helpless and it just keeps crashing.” As he scrambled to salvage irreplaceable documents, photographs, and memorabilia, the furniture and electronics slowly submerged. Glancing outside, Wayne could no longer see his 1965 Chrysler Imperial, a car that his family had

owned since before his birth. Though he had parked it in a location spared by previous floods, he was dismayed to see it four feet under water, along with other cars.

Wayne: *“They talked about Carla for fifteen years. Allison was worse than Carla. Harvey was worse than Allison ... Harvey was the worst thing I have ever seen.”*

When asked what he might have done differently, Wayne responded unequivocally, “I would have had flood insurance.” The experience rebuilding after prior storms gave the warehouse denizens a degree of confidence that they could rebuild, but Harvey was unprecedented. Faced with the staggering amount of damage and the sudden prospect of losing all of his income, Wayne got a FEMA-backed loan for \$240,000, but that was not enough to cover a whole complex.

Wayne: *“I did all the repairs myself, or else I never could have gotten it done for \$240,000. Between tearing out all the sheetrock, replacing every single appliance in the building, replacing every single kitchen cabinet, some flooring ... you’d be shocked at how much damage four feet of water can do. The water was only here for about twenty-four hours, but it was enough to really hurt me.”*

Help was found within the community as well. Nine out of ten of Wayne’s tenants stayed, including Kris and Zack, despite the warehouse’s unlivable condition. And they did more than just stay — in a testament to the neighborhood’s palpable DIY ethos, they grabbed hammers and crowbars and began clearing out the rotting drywall and trashed furniture. Kris described the sight as a “Mad Max scene” with debris strewn along the road. Along with help from friends, social media followers, and people who lived on the block, the warehouse was cleared out over the course of the next month, followed by Wayne spending most of the next two years rebuilding. For those who call it home, the warehouse is more than a place to live — it is a unique part of Houston culture to be cherished — they’ve rebuilt before, and, if necessary, they are ready to do it again.

Lillian Hood — Retired Teacher and Grandmother from Kingwood³

An eternal optimist, Lillian Hood and her husband moved to Kingwood in 1997 after lengthy careers teaching in Odessa, Texas. Their new neighbors vividly recounted stories about flooding there in 1994, and showed Lillian a picture of water covering the street signs nearby. While ominous, the neighbors told Lillian that the flooding was, to some degree, caused by the controlled release of water from Lake Conroe, where heavy rains threatened the dam. Water flowing down the San Jacinto River began to pool as it entered Lake Houston, causing extensive flooding throughout Kingwood.

The U.S. Geological Survey indicated the median discharge of the West Fork of the San Jacinto River is usually about 68 cubic feet per second (cfs). The San Jacinto River Authority disclosed that the rate of release in 1994 reached over 33,000 cfs.⁴

Despite the deluge, only one house in Lillian’s neighborhood had water. Because of the manmade character of the disaster, many Kingwood residents dismissed the danger of future flooding. Lillian remembered her neighbors saying confidently, “That will never happen again.” For more than twenty years, their happy-go-lucky approach was validated when storms, including Tropical Storm Allison, brought no significant damage. However, Hurricane Harvey shattered their solace.

Lillian, now an eighty-nine-year-old widow in a wheelchair, recalled meteorologists predicting fifty inches of rain. Then came the bad news — officials planned to release water from Lake Conroe to prevent a breach of the dam.

Lillian: *“I was like, ‘Uh oh, I’ve heard about that from 1994.’ My [caregiver] Judy Arnold was there, I said, ‘Judy, watch the street.’ The street was perfectly dry. Thirty minutes later, she said, ‘Lillian, the water is curb to curb, it’s coming up the driveway into the yard.’”*

The peak volume of water released from Lake Conroe was more than double that of the 1994 storm — 79,100 cfs.⁵ Without power, Lillian received no official evacuation notice. As she and Judy watched the water rise, Lillian felt that she was in imminent danger being wheelchair bound in a one-story home, so she called 9-1-1. After double-digit attempts to get help, she was told that the first responders could not guarantee immediate rescue.

Lillian called her daughter who lived on the other side of the river but received no answer. Now worried, Lillian called her granddaughter, who explained, “Mama and daddy are on a boat on the way to a shelter. They’ve just been rescued.” Considering how much water now lay between them and Lillian and Judy, they might as well have been in Saskatchewan. No help was coming from her family.

Eventually, a firefighter arrived on Lillian’s doorstep to say a firetruck waited a few blocks away, but high water prevented it from coming closer. He suggested that they walk to the truck, which Lillian could not do. She inquired about the high-water trucks, and he replied, “maybe tomorrow we can find one.” With the rapidly rising water, “maybe tomorrow” became downright terrifying.



A new retail center only a quarter mile from Lillian’s home, including the Whataburger, received over seven feet of water.

Photo courtesy of John Knoezer and reduceflooding.com.

Lillian: *“I thought I would probably drown that night, that’s what I thought. We hung a lantern, a battery-operated flashlight lantern on the front gate, right by the front door and put out a white towel. I thought that would be a signal of distress. And we just stayed right outside the front door with the door wide open, hoping somebody would come ... [but] if nobody came, there’s no way we could be saved.”*

Luckily, Lillian did not have to wait until morning. With water about to breach her front door, rescuers arrived in the nick of time. The 9-1-1 operators had organized a dump truck to back up to her front door where they scooped up Lillian and placed her in the truck. Judy and a handful of other neighbors piled in the back and were taken to a shelter.

After the rescue, Lillian recalled, “I still did not think about the horror. I thought maybe a few inches of water.

In my wildest dreams, I never dreamt four feet. I thought, ‘well tomorrow, my daughter and son-in-law will go get my van and come over here and get me at the shelter; I’ll go home.’ [sorrowful laughter] I didn’t know that was the end of everything as I knew it.”

Ever the optimist, Lillian preferred not to dwell on the destruction and never returned to see her home. Volunteers did the demolition work, salvaging what they could to decorate her new apartment in an assisted living facility. Lillian preferred to extract the good memories, especially those of the volunteers who opened their homes to strangers; offered food, water, and clothing; and took their boats out, saying, “They risked their lives to save people.”

Helen Benjamin — Grandmother from Kashmere Gardens⁶

Helen Benjamin is well-known in Kashmere Gardens. She is everyone’s grandmother, a beloved fixture of the community for more than fifty years. As a long-time Houston resident, Helen is well acquainted with the omnipresent threat of tropical storms.

During Tropical Storm Allison in 2001, Helen’s experience seemed to foreshadow future events. After the water in her house reached her ankles, Helen was forced to wait for a rescue. Told that the Coast Guard was coming, Helen eagerly anticipated their arrival — for hours.

Helen: *“They were supposed to be picking us up around 2:30. We stayed out there ‘till after 7:30 that night and we didn’t get picked up because every time the truck would pass they was already loaded, and they said ‘we coming back, we coming back.’”*



Lillian Hood recalled how frantic the search for her new home was, considering all of the other people in the same position.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.

After a long, tense wait, firefighters rescued Helen, but communication with the shelters was inefficient. As Helen was shipped around the city, being rejected by shelters that had reached capacity, the truck crashed into a ditch, forcing its passengers into the floodwaters to await another rescue vehicle.

In 2017, with cell phones, GPS, and experience gained from prior storms, one might expect that Houston handled Hurricane Harvey more smoothly than Allison. However, when asked to compare her experience with

the two storms, Helen simply said, in no uncertain terms, “It was worse with Harvey.” Helen and her daughter awoke before dawn Sunday, August 27, 2017, to find that water had already entered their home. She knew this meant the water outside was several feet high and their cars were destroyed. Helen: *“I don’t want to see it happen again ... [S]ome people said it didn’t flood out here, but you should’ve been here. You would know it flooded because this whole area was just like a lake ... The only way you could get out of it was take the towel and dry your feet off and get up in the middle of the bed.”*

Again, Helen had to wait for rescue, which came in the form of a gigantic dump truck — not a luxurious ride but high enough to ford the water and keep its passengers safe. Helen and her daughter arrived at the George R. Brown Convention Center (GRB), which again served as a shelter and seemed more orderly than it had in 2001.

Here, the two flood stories diverge. During Allison, the water in Helen’s home receded quickly, and, with the help of flood insurance, her life quickly returned to normal. However, Helen was subsequently dropped by her flood in-



Helen Benjamin has weathered many storms in Houston, including Tropical Storm Allison and Hurricane Harvey. Both flooded her Kashmere Gardens home.

Photo courtesy of Helen Benjamin.

surance, so she lacked the same financial advantage in 2017. Furthermore, the water lingered during Harvey, causing immense damage. Even after the water outside disappeared, Helen was baffled because the house still seemed wet inside.

Helen: *“We had this house built in the year that President Kennedy got killed ... we found out the wood floors was built on top of plastic ... and that’s why the water wasn’t going out. The plastic was holding the water and once they pulled [the floors up] it was little lakes under there.”*

With her home devastated and no insurance, things looked grim, but Helen still had faith, family, and friends. She received support from her church, her community, and her daughter’s employer, but she still did not have a livable home and had lost most of her possessions. Then, fortuitously, a *USA Today* reporter, Natalie Neysa Alund, whose goal was to “write as many Harvey stories as possible,” sought out Helen, who quickly bonded with the reporter and her crewman, Larry McCormack. Helen and the reporter both belonged to the Church of Christ, and the cameraman reminded Helen of her late son, who was also named Larry. Helen’s story was published in *USA Today*, but she did not imagine the impact that would have on her recovery and her life.

Helen: *“I still hear from some of the people. One of the ladies sent me a little quilted piece for my table a few weeks ago and some little mats and sent my granddaughter something. And it was so funny because everybody mostly sent me some color books, and I was thinking, ‘Color books?’ So that Sunday night ... the lady from USA [Today] and Larry came to my room [in the hotel], and I was in the bed coloring [with] Crayolas and pencils. So I’m thankful. I’ve been blessed that’s all I can say.”*

Helen was also moved by a group of students from South Dakota who traveled over 1,000 miles to Houston on a bus to help hurricane survivors in her neighborhood. After posing for selfies, the gregarious students implored Helen to come to South Dakota for a taste of their extreme weather. Chuckling, Helen explained, “They going to show me a real blizzard.”

When researchers study Hurricane Harvey, they can quantify the storm’s myriad effects on Houston in many ways. They can count the 1.2 trillion gallons of water, estimate the total financial damage, or look at the number of homes affected. The numbers are informative, but they do not reveal what Hurricane Harvey means to Houstonians. We cannot quantify the Slagles’ feelings as they heard their furniture sloshing around their house, nor how Wayne, Zack, and Kris felt seeing their beloved warehouse under water. Nor can we quantify Lillian’s urgent fear that she may drown or Helen’s frustrating inability to repair her home. The experiences of ordinary people are the missing ingredient necessary to understand why the storm matters. Their experience is the story of Houston during Hurricane Harvey.

Andrew Davis is a senior at the University of Houston, majoring in philosophy and minoring in history. He is currently an intern at *Houston History*.



Volunteers set up cots inside the George R. Brown Convention Center in anticipation of the storm evacuees.

Photo courtesy of Revolution Messaging, Flickr.*

Helping Hands and the Challenges of Recovery from Hurricane Harvey

By Sandra Tzul

As Houstonians rode out Hurricane Harvey — the most devastating storm in Houston’s history — recovery weighed heavily on their minds. Rains pounded the area in late August 2017, as residents witnessed rising water levels, destruction of homes, and despair in people’s eyes. Through it all, volunteers and ordinary people worked to tame the chaos.

Churches and community organizations played a significant role in aiding people who had no one to help them with food and clothing or shelter and home repair. Some people lacked flood insurance, and even those who had it faced intense pressure navigating their recovery, desperately seeking assistance.

Pastor Rudy Rasmus, who leads St. John’s United Methodist Church with his wife Juanita Rasmus, believes in reciprocal accountability: the church and the faith community have a responsibility to give. Since 1992, the congregation has served meals to thousands of people, especially through its nonprofit Bread for Life ministry, which aids people facing disasters or challenges in their daily lives. Pastor Rudy explained that their outreach originated with “a collective of individuals who have come from different walks of life and different zip codes, different backgrounds and experiences [who] all felt that this is the one thing that we should be doing.”¹

With its downtown location largely unharmed by Harvey, the church became a staging area to receive and distribute goods. Singer Beyoncé, a St. John’s member who grew up in the church, came to help. She requested her sponsors donate items, which included about a thousand mattresses



Pastor Rudy Rasmus of St. John’s United Methodist Church pointed out that the church has helped with disasters for so long, they instinctively know what people need and how to care for them.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.



As the city struggled to recover from Harvey, Houstonians found ways to ensure their neighbors got what they needed by cruising neighborhoods with supplies.

Photo courtesy of Debbie Z. Harwell.

and, Pastor Rudy estimated, “sixty eighteen-wheeler loads of supplies” from one organization over eighteen months. Her friend, entertainer Tyler Perry, wrote a check for \$250,000 to help Harvey survivors.²

Nearby, Wheeler Avenue Baptist Church relief center also helped those in need with donations they received. As evacuees arrived, church members and volunteers connected people with the help they needed. Gloria Rose, a Wheeler member, recognized “that a lot of [them] that came, they had never heard about FEMA. So they wouldn’t have known to go and get a FEMA number, but they were in need.” Rose, who felt disrespected in her recovery after Hurricane Katrina, wanted people impacted by Harvey to know that the volunteers were there to help them, not belittle them. Deacon Endra Cosby, who played a major role in the church’s relief effort, observed, “Everyone just kept sending and bringing and giving [donations].” Senior pastor, the Rev. Dr. Marcus Cosby, vowed, “We[re] going to keep giving. And the more we give, the more we get. This is what Wheeler Avenue does.”³

The pressure of rebuilding a storm-ravaged home exceeded what many people could handle alone. Initially, they needed help with the physical work, and many volunteers offered it. The First Presbyterian Church of Kingwood and pastor Mark Renn stepped up to help Kingwood residents who needed assistance cleaning out their flooded homes after Harvey. Based on past experience, he assembled crews who helped muck and gut homes, removing everything wet — furniture, flooring, and sheetrock. They also moved debris from front yards to the curb so bulk garbage trucks could pick it up.⁴

The relief provided by volunteers lifted a weight off the shoulders of storm survivors who were shocked at seeing their homes destroyed. Renn recognized that in a time of despair, people “did not know where to start” nor “what to do next.” The church crews could comfort them, saying, “Okay, you’re fine now.” Renn, like Gloria Rose, understood the importance of volunteers approaching the flood victims with sensitivity and respect for what they had lost. He estimated 200 volunteers helped in the three weeks following Harvey, and a small group continued on with debris clean-up. Renn credited the volunteers’ faith for the support the church gave to thousands of survivors, including the muck and gut operations, providing meals, offering counseling, and more.⁵

James Joseph, a Fifth Ward community leader and resident, recalled that the “real help” emerged when local nonprofits, churches, and charities stepped in to aid the relief efforts. The compassion of these organizations and their volunteers transcended class, ethnic, and geographic boundaries. Joseph remembered feeling “pleasantly surprised to see the compassion from more affluent people helping” in his community. The general concern he saw for those afflicted by Harvey reaffirmed his belief that “a hurricane can take the mind, but it can’t take the heart.”⁶

While community organizations helped thousands of storm survivors, the disaster’s massive scale caused others to take a different approach rather than wait for aid. For example, skyrocketing demand for home repair forced some people to become their own general contractors, learn how to install sheetrock, and return home before their repairs were completed because they could no longer afford temporary housing.⁷

One major factor in residents’ ability to move ahead was if they had flood insurance. Many people felt safe because

their homes had never flooded, and others could not afford a policy, but both groups experienced financial hardship when water inundated their homes in Harvey. In Harris County, “just fifteen percent of 1.6 million homes had flood insurance,” and “only twenty-eight percent of homes in ‘high risk’ areas for flooding” had it. Hurricane Harvey set a FEMA record for disaster assistance applications. FEMA assists those who qualify with a temporary residence and in making their home safe and livable, but it does not restore the home to its pre-storm condition.⁸



Elgene Muscat took a photograph (left) of her neighborhood as she evacuated. For her flood claim FEMA expected an inventory of all her damaged belongings, even toothpaste. Photos courtesy of Elgene Muscat.

FEMA agents visited homes to inspect the damages, but the applicants’ experiences differed. For example, FEMA required some homeowners to provide an extensive inventory of the items they lost. According to Elgene Muscat, the form asked, “How many tubes of toothpaste [did you have]? ... How many bars of soap did you lose? How many towels did you have? ... And then on some of the more expensive items, they wanted pictures of the labels.” She expressed her frustration: “Not only do I not have the picture of the label, [but] that stuff was hauled off weeks ago” by the garbage trucks. She saw a “disconnect” between what the government agencies required to process a claim and the reality of flood victims’ circumstances as they tried to gut their houses. By contrast, Northeast Houston resident Alvinea Randolph recalled the FEMA agent who visited her home “walked around, and that was it”; he asked no questions.⁹ After a lengthy wait, she received an email saying she was denied aid.

Tom and Lisa Slagle had flood insurance, but they still “had to figure out how to navigate [the system] from one day to the next.” Their insurance did not cover exterior damage, and the interior coverage also had limits. For example, after the water came up their staircase, flood insurance only covered replacement carpet to the waterline at the fifth step rather than matching all the way to the top of the stairs, as happens with most homeowners’ insurance. Other types of aid were limited because they had insurance. FEMA gave



Wheeler Avenue Baptist Church became a staging ground for supply distribution efforts. A year later, the church was still distributing financial aid to those in need.

Photo courtesy of Wheeler Avenue Baptist Church.

them money for one month's rent, but they were out of their home for eighteen months. They applied for a low-interest Small Business Administration loan but received only \$25,000 of the original \$197,000 they expected. They also applied for part of the \$1.2 billion the City of Houston received to help Harvey survivors but still had not received a decision at the time of this magazine's publication.¹⁰



Ana Vazao's home required heavy repair work to restore it to a livable condition. She found strength in two phrases: "It is what it is" and "it is okay not to be okay." Photo courtesy of Ana Vazao.

Ana Vazao did not have flood insurance on her Crosby home of fourteen years, which flooded for the first time during Harvey. Although friends offered Ana a place to stay, she had no economic support, so she sought FEMA aid. Phone lines were swamped, but Ana was among the 317,150 Texas residents approved for assistance. She returned home every weekend from mid-September to March to see about starting repairs. The experience was arduous; Ana had to dedicate her "energy, [and] power [to] just taking care of the home ... [and] making appointments with contractors." However, her hassles with contractors did not end there. Ana's walls had to be redone three times because contractors made mistakes like failing to install insulation and cracking the water pipes. Ana's home was finally completed almost a year after Harvey.¹¹

Many other Harvey survivors also emphasized the difficulties in finding a reliable contractor. One Kingwood resident, Kathy Scott, and her husband, who did not have flood insurance, took out a \$100,000 loan to pay for the repairs caused by two feet of water, adding, "It's emotional, losing everything you worked so hard for over the years." Every step of the way the Scotts had problems with contractors who were not truthful or did not complete repairs properly. Over a year later, their bathroom, floors, and kitchen were still not done, and they had no furniture downstairs. The couple lived on the second floor of their home as repairs continued, including some they were doing themselves. A flood survivor and resident of the same neighborhood where almost 80 percent of the homes flooded, Don Witt estimated that half of the area's homes either had not started repairs or had them ongoing in October 2018.¹²

Especially in heavily flooded neighborhoods, people could not wait on others to begin rebuilding their beloved homes, and they learned how to do portions of the work themselves. Lynne and John Boone had flood insurance but no connection with a general contractor, and the ones they contacted asked the couple to wait for months. The Boones, who lost everything, became their own general contractor and purchased materials from builders' supply stores for their subcontractors.¹³ The couple finally returned home ten months later after living in seven different locations.

José Manuel Méndez was also forced to begin repairs on his home by himself, learning as he went even while working two jobs and taking care of his family. He described the time, saying, "Everything is shaky, and you're trying to figure things out as you go." He learned construction skills by doing his own electrical work, plumbing, sheetrock, and painting. When the repairs were about half complete, finances forced his family to move back home because they could no longer afford the mortgage and rent. More than a year later, he lamented, "The house is not a hundred percent complete."¹⁴



José Manuel Méndez and his son worked on their damaged home even as the world around them began returning to normalcy. His younger children worried when it rained and asked their dad, "Is it going to flood again?" Photo courtesy of José Manuel Méndez.

The recovery process and the challenges people faced repairing their homes reveal the devastating effects of Hurricane Harvey. The organizations and individuals who helped gut homes or provided storm survivors with food, shelter, and clothing played a crucial role in restoring people's lives. Others rose to the occasion by figuring out how to support themselves. Whether they utilized help or went it alone, Houstonians showed their resilience and determination to recover in the aftermath of the storm.

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Adapting a Plan: The City of Houston's Emergency Shelter During Hurricane Harvey

By Christina Shibu



Houston Fire Department EMTs administer aid to a Hurricane Harvey evacuee in front of the George R. Brown Convention Center shelter. Emergency medical personnel and doctors treated patients for many different issues from dehydration to mental health issues and chronic illnesses.

Photo courtesy of Diana J. Rodriguez.

One week in the latter half of August 2017, Houstonians witnessed two vastly different sides of nature. On August 21, as schools resumed classes, adults and students alike were awed by the solar eclipse that occurred that day. Four days later, Hurricane Harvey made landfall at Port O'Connor, Texas, and forever changed the lives of Houstonians.

In many ways response to Hurricane Harvey reflected the city's communal spirit. As residents were rescued from their flooded homes and moved into shelters, city health officials managed public health needs, hospital treatment, and disease prevention. While many shelters provided refuge to evacuees, the George R. Brown Convention Center (GRB) unexpectedly became a mass shelter on Sunday, August 27, housing approximately 11,000 residents over a twenty-two-day period and providing them a much-needed lifeline.¹

The city's original plan for a storm emergency involved "work[ing] with the American Red Cross and a number of other community partners to have large shelters set up around the city," explained Dr. David Persse who serves as physician director for the Houston Fire Department Emergency Medical Services (HFD EMS) and as the public health authority for the City of Houston. Overseeing disaster preparedness in both of his roles, Dr. Persse observed, "When Harvey hit, those shelters all stood up exactly according to plan ... except they filled up almost immediately."

As a result, even though the city had used the convention center as a shelter in the past and planned never to do so again, circumstances forced officials to convert GRB to a shelter, despite the fact it had "no cots [and] no supplies for disaster preparedness." Dr. Persse emphasized, "The disaster doesn't read your plan ahead of time. You find that your plan never matches exactly your needs. But if you understand your assets, whether it be a piece of equipment or a concept in a plan, ... you will be able to then apply it, perhaps in a twisted, changed fashion, to meet the need that you have during the actual disaster."² This philosophy captures how GRB functioned during Hurricane Harvey. Intended to accept 5,000 evacuees, it took in more than twice that number.

Once the City of Houston decided to activate the temporary shelter at GRB, organizations like EMS used all the tools at their disposal to open it. Emergency medical professionals come into a disaster equipped with assets such as training, experience, and departmental resources to prepare for multiple types of scenarios. Additionally, all EMS healthcare providers and first responders participate in mock drills, so that they enter a disaster zone equipped with the skills and knowledge to serve those in need.³

Emergency planners use lessons learned from previous disasters to plan future responses. For example, following Tropical Storm Allison in 2001, which was Houston's worst flood prior to Harvey, EMS set up a new communication pathway with federal officials trained in healthcare to ensure that proper medical equipment and supplies were quickly shipped to disaster-affected areas. Furthermore,



Within a few days of opening the shelter, a Federal Medical Station from the Strategic National Stockpile was set up in GRB to accommodate patients with acute medical needs.

Photo courtesy of the Center for Disease Control.

HFD regularly updates its technologies and rescue methods, such as the use of swift-water rescue teams and high-water vehicles to reach neighborhoods with rising water.⁴

To get a glimpse into the EMS team members' effort, Dr. Perse and three of the doctors shared their experiences with the Resilient Houston: Documenting Hurricane Harvey project. Dr. Chris Souders, associate medical director of HFD EMS, described their initial medical role and how it expanded: "We started with having an EMS unit or two there, and then setting up a table with a couple [of] nurses and first aid." Into the second day, however, "it basically got overwhelmed" as people's needs grew more complex.⁵ As the number of GRB patients expanded, additional healthcare workers arrived and addressed specific patient needs while the team of EMS doctors took on a more administrative role.

Part of GRB was transformed into an emergency room as donations from local communities started pouring in; among them were food, cots, and privacy curtains. Hotels provided towels and blankets, as well as laundry assistance. Medical supplies, including oxygen tanks and medicines, came in from a variety of donors, such as corporations and local pharmacies. The GRB refrigerators once used for food and beverages stored medications instead. Dr. Souders remembered receiving "mountains of donations."⁶

Federal aid also arrived at GRB. Disaster Medical Assistance Teams (DMATs), which are Federal Emergency Management Agency (FEMA) entities comprised of doctors, nurses, technicians, and other staff members, arrived a couple of days after the shelter opened and provided intermediate-level patient care. Additionally, FEMA's ambulance strike team helped transport patients to hospitals when needed.

Because hospitals were receiving patients with flooding and regular health emergencies, the EMS doctors designed a triage system at GRB to accommodate hospital-bed availability. Dr. Lars Thestrup, assistant medical director for

HFD EMS, pointed out, "For my dialysis patients, I didn't want to send them to the ER when our hospitals were functioning at 100 percent capacity. Instead we had to come up with a different plan to ensure they were dialyzed regularly while staying in the shelter." Thus, the doctors triaged GRB patients based on acuity: lower acuity patients, who had less urgent needs, received care from family practice physicians; and higher acuity patients, who had urgent needs, were treated by emergency physicians and other specialists or were transferred to hospitals when appropriate.⁷

Doctors addressed a variety of medical issues while GRB operated as a shelter. A significant number of patients needed dialysis, but other illnesses, sometimes chronic, were also treated. Dr. Kevin Schulz, assistant medical director with HFD EMS, recalled, "We ended up actively managing sixty-two dialysis patients out of the shelter by the time we were at our full capacity." Dr. Thestrup remembered, "We saw everything. We saw eclampsia. We saw a stroke. We saw people having chest pain, shortness of breath, lacerations, and psychiatric [issues]." Furthermore, to prevent the spread of infectious diseases — especially the norovirus which can spread quickly in confined areas — professionals from the Houston Health Department (HHD) continuously monitored for signs of infection.⁸ Aside from regular ambulance transport services, care rendered by HHD and HFD EMS was not billed. Instead, medical providers prioritized helping people regardless of their ability to pay — a testament to the city's unity in the face of disaster.

Professionals from the Baylor College of Medicine Department of Psychiatry catered to patients' mental and behavioral health needs. Many patients struggled to cope with their losses, some had pre-existing mental illnesses, and others evacuated without their medications. Dr. Perse described the issues patients faced in the long term, observing, "People are realizing they're not going to get back into their homes soon ... that they're running out of money, that



Planning for the next storm includes examining what did and did not work previously. In 2018 Dr. David Persse, public health authority for the City of Houston (left), and Steven Williams, head of the Houston Health Department (right), evaluated the local storm response in a panel sponsored by the U.S. Department of Housing and Urban Development (HUD).
Photo courtesy of HUD.

the federal aid is about to end, and that they've got more problems. They're emotionally fatigued. They're exhausted." After working with patients at GRB, professionals in the Department of Psychiatry screened for at-risk patients and intervened medically through outpatient clinics and other Houston-area hospitals.⁹

The types of care provided at GRB did not stop there, as Dr. Schulz shared: "The UT School of Dentistry has a mobile van where they do dental check-ups and minor procedures. By the end of the second week, they were pulling up outside. ... Somebody else was doing eye exams and making glasses for people who needed glasses right there on the spot." Although these additional resources were not necessarily



Private and public ambulances provided services for patients who, after being evaluated by doctors onsite, needed transport to hospitals.
Photo courtesy of Diana J. Rodriguez.

needed the moment the shelter opened, the professional services provided to the evacuees proved highly valuable. Dr. Thestrup called it "divine intervention, a lot of luck, and a lot of miracles" when help that was not necessary in the present moment somehow showed up when needed in the future. Apart from tending to patients' medical needs, GRB offered several other services. For example, HHD assisted evacuees with FEMA

enrollment and housing aid, while the Missing Person Center helped locate missing loved ones.¹⁰

Even though a mass shelter generally is not considered a joyful place, many professionals and volunteers found working at GRB rewarding, with moments of hope and laughter emerging unexpectedly. Dr. Schulz shared some of those moments, "I came in one night, and there was a guy out in the main foyer giving haircuts. He had set up a folding chair and put up a sign that said, 'Free haircuts,' and he had a line down the hall." He also recalled, "walking through at about two o'clock in the morning, [and] there were fifteen or twenty people having a little karaoke party."¹¹

When the shelter closed, HHD ran its Multi-Service Centers (MSCs) and established Neighborhood Restoration Centers (NRCs), which provided services similar to those rendered at GRB. In the three weeks during and after Harvey, MSCs assisted nearly 5,000 people in procuring food, shelter, transportation, and other services. Furthermore, HHD expanded relief efforts in hardest-hit neighborhoods, like Kashmere Gardens, establishing a dozen NRCs after mid-November. These centers assisted hundreds of clients daily, providing information, resources, and health services, as well as strengthening long-term neighborhood resilience.¹²

Responding to those affected by a disaster is a team effort, and strong leadership from beginning to end is critical to managing a shelter for thousands of evacuees — especially one that was not part of the original plan. To adapt to the circumstances, Dr. Persse explained, "Sometimes you have to inspire your team members to do something which they've never been asked to do before. And you have to do it in a way that you impart confidence to them ... and every time you do that and you succeed, your team becomes a little bit more courageous, a little bit more resilient." Echoing that assessment, Dr. Thestrup pointed out, "There was nothing conventional about what we did [at GRB]." He found it particularly rewarding to see that when they employed their resources (large or small) it allowed the "typical plans to kick into place."¹³

Every health professional at the shelter had a mission to serve the needs of the patients in the disaster no matter the circumstances. Dr. Souders stressed, "We got into EMS to take care of all patients. We don't care about their insurance, who they are, or where they are. So, this is really just an extension of that in my mind. And these are people having a horrible day — maybe the worst day of their life ... Once you were here, we were going to help take care of you."¹⁴

The work done at GRB captured a portion of the overall public health response to Hurricane Harvey, and it also portrayed Houston's community spirit through individuals and organizations uniting around their expertise and resources to serve the vulnerable in a time of need.

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After the Storm Clouds Dissipated: Mental Health in the Wake of Hurricane Harvey

By Andrew Tello

When a hurricane strikes, those caught in its path often feel powerless to do little else but weather the storm. While physical damage is frequently synonymous with hurricanes, it represents only a fraction of the damage a natural disaster can bring. With a storm as intense as Hurricane Harvey, trauma follows much like the sun when the storm clouds dissipate. Some of the participants in the Resilient Houston: Documenting Hurricane Harvey project discussed how trauma remained with them even after the storm had left the region and how they grappled with it as best they could.

A licensed professional counselor, Mary Jo Lagoski specializes in EMDR therapy that focuses on dealing with and overcoming a traumatic event. She explained that the three basic responses to a trauma are “flight, fight, or freeze,” but “one way or the other, [survivors are] going to have a reaction.” Trauma from flooding, unlike some other events, lingers because when a person’s home floods, the situation does not quickly return to normal; instead it extends for months and, perhaps, years.

Even as an experienced professional, Mary Jo was taken aback by the community-wide impact an event like Harvey could have. Before Harvey made landfall, she was not particularly worried about it nor was she concerned by a news broadcast announcing that “Lake Conroe was going to open the flood gates just a small amount.” The next morning, she recalled, “[Our] street was totally dry. ... So I thought, ‘Okay, everything’s fine. We’re fine. It didn’t flood,’” until she turned on the television. Mary Jo was shocked to see the damage done to her neighborhood and the city at large, calling the pictures “guilt-producing and frustrating.” She recalled, “In the early days we were somewhat ‘trapped’ on an island. The water had come within a quarter of a mile of our street in all directions. We sat on an island of sorts until the water receded enough to get out and help.” At that point



As recovery from the storm began, Houstonians found solace in each other. Linda Vogel (second from right) assisted many in her Kingwood community through caring and outreach.

Photo courtesy of Linda Vogel.

she put her therapy skills to work.¹

Mary Jo’s efforts centered on her ability to help people process what had happened and to work through their trauma. Her services varied: from leading a support group for storm survivors, to training others how to listen and speak sensitively with their flooded neighbors, to helping them adjust to living with others or in their own flooded homes, to helping a client whose

trauma was “retriggered” by dealing with FEMA and seeing images on the non-stop news coverage. Through her work, Mary Jo saw trauma take shape in a myriad of individuals in multiple ways. Over a year later, she was still seeing more clients with post-traumatic stress disorder (PTSD) than she had seen with any prior weather event, which was exemplified by the number of people posting worried comments on Facebook asking if it will flood again whenever it rained.²



Though she escaped direct damage from the storm, Mary Jo Lagoski assisted those who were less fortunate by using her skills as a counselor and as a leader.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.

The trauma produced by Hurricane Harvey resembled the trauma people faced from earlier storms and carried with them for years. For example, Harvey was not the first storm Third Ward resident Gloria Rose survived. Originally a New Orleans resident, Gloria and her family crammed themselves into their two cars and took off in search of a dry place during Hurricane Katrina. They had to pause their escape at a bridge because the “pitch black” night made driv-



Gloria Rose, seen at left speaking with Sherridan Schwartz at Wheeler Avenue Baptist Church, credits her faith for her survival. In times of crisis, prayer gave her strength to see things through.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.

ing too difficult. Gloria recalled “[hearing] people falling off the bridge,” which was confirmed when daylight broke, and she “saw people on the ground that had expired.” The lingering memories of the sights coupled with the sounds of “children crying everywhere” may have caused Gloria, who is devoutly religious, to pray before Hurricane Ike, “Lord, don’t let it be as drastic as Katrina.”³

After Katrina, Gloria and her family settled south of Houston in Pearland, and she felt confident in the choice, noting that “[people] told me that it didn’t flood out there.” But hearing news of Hurricane Harvey approaching, Gloria said she worried because “[every] time we get a hard rain, it brings back memories” of Katrina. She remembered standing by her front door and praying, “Lord, please don’t let this water come in the house.” When she saw the water recede before reaching her home, Gloria recalled saying, “Thank you, Jesus. The water is going back.” Even though her home did not flood, Gloria continued to pray that no one drowned because she did not want history to repeat itself.⁴ Her faith gave her strength to weather the storm.

Nomi Solomon’s home flooded in the 2015 Memorial Day and 2016 Tax Day floods before Hurricane Harvey hit the family again. After those previous experiences, Nomi said, “Your mentality changes. It’s like survival. How am I going to survive, if and when this happens again?” The first time Nomi flooded, she had just given birth a few weeks earlier, but six or seven months later, she still “didn’t feel like [she]

For Ana Vazao, and many other Houstonians, the physical damage from Harvey was only the beginning.

Photo courtesy of Ana Vazao.



was getting out of the funk.” An experienced social worker, Nomi sought the aid of a psychiatrist to help her through her trauma.⁵

During the Memorial Day flood, Nomi wanted to help her pre-school children deal with the emotions that flooding can cause and had them pretend they were on Noah’s ark, asking what animal they wanted to be. Nevertheless, she explained, “We’re super open with them. . . . I’m not hiding my tears or my sorrow.” After Harvey, Nomi mentioned that “[their] elementary school flooded, so all these kids [were] displaced,” which has become a common thread of Meyerland residents’ existence and gives the children “a very similar experience, so they can talk about it.” Nomi tells her children, “This is your stuff to share. If you want to talk to your friends about it, go for it.”⁶ Nomi sees tremendous value for adults and children alike in talking through their problems to grapple with trauma.



The Solomon family has remained resilient, despite repeated flooding, by being open to talking through their feelings.

Photo courtesy of Nomi Solomon.

A Houston native and educator, Ana Vazao only suffered minor flooding. However, she stressed, “[I]t doesn’t matter. One, two inches, you still have to gut out your home. You’re still going through the trauma. You’re still going through the rebuild.” Ana, after seeing the damage the flood water did to her home, felt as though she was there “physically, [but] not mentally.” Despite being affected by Harvey personally, Ana had to help coworkers with their loss. As her school’s counselor, she did a presentation for the faculty on strategies to cope with their Harvey experiences. She found this very difficult to do, but she also wanted to convey a sense of strength about rebuilding – the same sentiment that helped her deal with her trauma. Ana observed, “You have to take care of yourself before you can do anything else.” Although

she admitted that “sometimes life is hard; you have to understand that you’re not always going to be okay. But you have to keep telling yourself, ‘Face your fears because you’ve got this.’”⁷ Ana’s self-reliance worked for her, but sometimes people needed more help.

A Long Island native, Linda Vogel’s career experience as a chaplain and life coach became invaluable when Hurricane Harvey impacted her Kingwood neighborhood. She became aware of Harvey’s devastation when she saw posts by her friends and family on social media, recalling, “It was so big and so overwhelming.” She began by checking on people she knew and then “helping them physically with what they needed . . . mucking out houses and bringing food and giving them emotional support.”⁸ Providing such support for Harvey survivors became Linda’s goal in the storm’s aftermath.

Linda had extensive disaster training and understood the importance of “listening and giving people the time to tell their story and to have genuine concern about who that person is because every story is different.” She believes that “God gave us two ears and one mouth. And it’s real important that you use your ears a lot more than your mouth because the kind of trauma that people go through [in a disaster] isn’t a physical thing a lot of times.”⁹

As time progressed, Linda’s efforts coalesced into a group called “Hope in the Forest,” a play on Kingwood’s nickname, “The Livable Forest.” She planned to assemble a forest of decorated miniature Christmas trees to share with Harvey survivors for the holidays because many people who had lost almost everything “were not thinking about Christmas.” Linda’s friend Mary Jo Lagoski enlisted help from her congregation at Kingwood First Presbyterian Church, until their joint efforts grew “from five trees to ten to fifteen to twenty to over two hundred [trees].”¹⁰ Linda’s experience, coupled with her desire to help, brightened the spirit of Harvey survivors, giving them a ray of hope to aid them in dealing with their trauma.

Survivors of Hurricane Harvey’s emotional turmoil encompassed much more than these few examples or these neighborhoods. Harvey is unique in that it affected almost every Houstonian in some way, even if they did not receive a single drop of water inside their home. A 2018 study in the *International Journal of Environmental Research and Public Health* that examined the effects of Harvey on Houstonians one year after the storm found that 46 percent of the study’s



Linda Vogel’s disaster training was put to the test after Harvey, when she provided emotional and spiritual support to storm survivors who had endured multiple rescue operations or dealt with fear because they could not swim.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.



A Kingwood resident shows off a donation from Hope in the Forest, a project that tried to restore a sense of normalcy — and provide some Christmas cheer — to people who had lost their homes and possessions.

Photo courtesy of Hope in the Forest.

participants “met the threshold for probable PTSD symptoms” based on a questionnaire that measured “symptoms of depression and generalized anxiety disorder.”¹¹ While storm-related trauma may not be as visible as physical damage, it still requires compassion and care.

Working through trauma takes time and patience, and though there is no one-size-fits-all approach, showing empathy seems to go a long way on the road to recovery. In speaking to the University of Houston’s Voices from the Storm class, Mary Jo Lagoski discussed the importance of being respectful of someone affected by trauma, emphasizing, “If you ask them how they’re doing, listen to them.” She added it is crucial not to “impose what you think they should think” but rather to ask them open-ended questions and then really pay attention when they are speaking openly about what they experienced. While Mary Jo said “ultimately life moves on to the ‘new’ normal,” she also stresses the importance of seeking the help of a therapist, pastor, or friend when trying to navigate the healing process from such a tragedy, even for those who may not be suffering from PTSD. Linda Vogel offered a similar perspective on how to help Harvey survivors, saying: “I can’t put a Band-Aid on what happened to you. I cannot do anything to change what happened, but I’m sure going to be your friend. And I’m sure going to listen as best I can.”¹²

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A Moment to “Paws” and Reflect on Pets and Wildlife During Hurricane Harvey

By Carmen Crandell

Many pet owners love their pets and treat them like family members, but this intense affection also forces them to make agonizing choices when it comes to evacuating in times of natural disasters. During Hurricane Harvey, some had no choice but to leave their beloved pets behind when fleeing the rising waters, while others were able to carry their pets with them to safety. Evacuation was only the beginning; pet owners had to find accommodations that allowed their animals to join them. Some evacuees found refuge in the homes of family and friends, but others arrived at local shelters, which did not necessarily welcome pets.

A lack of pet-friendly options consistently presented an obstacle for pet owners facing evacuation. Captain Nathan Lilley, a firefighter and paramedic with the Houston Fire Department (HFD), remembered seeing people who were not trapped initially but stayed in their homes to protect their pets. When HFD responded, he noted, “The water was three and four feet high into their living space, but they didn’t want to leave because they didn’t want to lose their pets.”¹ In some cases, first responders had to cut holes into the roof to rescue pet owners from their attics.

While no pet owner wants to leave their pet behind, they might feel they have no choice. José Manuel Méndez evacuated from his home in Spring on August 25, 2017. The

family did not anticipate the water rising so high, and, at the last minute, decided to evacuate to Mexia, Texas, two hours away. José’s truck had enough space to carry the family of six and their small dog but not enough room for their big dog. They made the tough decision to leave him behind with food, hoping José could return.²

The floodwaters continued to rise and by the next morning, the “kids [were] really frantic,” scared the dog might drown. José decided to return to his home, purchasing a kayak to rescue his dog. Along the way, he met someone with a larger boat who volunteered to take him home. When he arrived, the water in the street was up to his chest while the water in his house was above his knees. Once inside, José found his dog on the couch attempting to avoid the floodwater. Thankfully, the Méndez family avoided heartache, but not all pet owners were so fortunate.³



Perla King and her beloved Shrek, who she lost during Hurricane Harvey.

Photo courtesy of Perla King.

Perla King had no way to take her pet donkey, Shrek, with her when she evacuated. The police forced everyone in her Crosby neighborhood, northeast of Houston, to evacuate during the storm because officials feared the nearby Arkema chemical plant could explode. The army evacuated Perla, her husband, their dog, and many of their neighbors, but Shrek had to stay behind.⁴

Worried about their donkey, the Kings tried many times to go home and care for him, but the police turned them away. Finally, on August 31, 2017, one policeman let them in to check on Shrek, who was not doing well. As they tried to feed him, the chemical plant burst into flames, and they had no choice but to leave their donkey yet again. After the explosion, no one was allowed into the neighborhood, including veterinarians, for more than a week.⁵

Upon returning home, Perla remembered seeing many dead animals in the street. She immediately checked on



When his family evacuated, José Manuel Méndez was forced to leave his bigger dog at home due to lack of space in his truck. Fortunately, the dog was safe when Méndez returned for him.

Photo courtesy of the Méndez family.

Shrekky who was now very ill. All she could do was say good-bye before he died shortly thereafter. When remembering all she lost during Harvey, Perla reflected, “The vehicles, that [we] can make up ... The most [important] thing that we lost, that hurt, was my pet, my donkey.”⁶



Maggie, Lynne Boone’s cat, suffered from trauma long after Hurricane Harvey’s water receded.

Photo courtesy of Lynne Boone.

Unlike larger pets, Lynne Boone’s cat, Maggie, could easily be carried when evacuating during Hurricane Harvey. Lynne and her husband, John, who live near Lake Houston, did not anticipate needing to leave until the water started rising nonstop. Not expecting to be gone long, they brought a jar of cat food but no cat litter. Fortunately, a friend took them in and also provided for Maggie’s needs. Lynne believes Maggie was traumatized by their nomadic lifestyle after

Harvey, which involved staying in seven different places before they returned home about ten months later. Even back at home, Maggie stayed right by their side for security.⁷

Flooded homes were not the only challenges facing pets and their owners. Veterinary hospitals, where many animals were housed, also flooded, presenting challenges for animal safety. Dr. Max Heimlich, a veterinarian at Stuebner Airline Veterinary Hospital, was working on Friday, August 25, 2017, the day Hurricane Harvey made landfall. To prepare, he and the hospital staff transported the animals to the facility’s second floor and called the pets’ owners to assure them their pets were safe.⁸



Dr. Max Heimlich is a veterinarian at Stuebner Airline Veterinary Hospital, where he helped move all of the pets to a safer location to escape the flooding.

Photo courtesy of Resilient Houston: Documenting Hurricane Harvey.

The floodwaters steadily rose, and by Sunday, they had to use fifteen boats to evacuate all forty-four pets to an employee’s nearby home. The pets spent Sunday night in her barn, and employees called the pet owners to inform them of their pets’ location and that they were safe. The pet owners had the option of either picking up their pet or letting employees move them to a shelter, where they would be well cared for until their owners could get them.⁹

As part of the family, pets should be part of the evacuation plan. When preparing

for a natural disaster, Dr. Heimlich suggested to pet owners: “Make sure that you have some sort of ID on the pet or a microchip under the skin on the pet, so the pet can be identified if for some reason you have to be evacuated, and [you] cannot take the pet or if the pet escapes when you’re trying to evacuate in a hurry. ... That’s the single most important thing.” Heimlich also suggested taking bottled water, a small amount of pet food, and a crate or a cage when evacuating, all of which he saw as imperative to the process.¹⁰ Though natural disasters are difficult for everyone involved, having a plan prior to a disaster can prevent the unnecessary loss of a pet.

Houstonians not only lost pets, but local wildlife was also displaced or killed by the storm. Forced from their habitats, alligators and snakes appeared in residents’ yards, seeking higher ground. Volunteers rescued hundreds of bats from their home under the Waugh Bridge, and passers-by saw bats clinging to buildings. Many wild animals and livestock in the region perished during Harvey with nowhere to go. As Lynne Boone evacuated, she recalled seeing “five large deer swimming down the canal towards the lake. And the water [was] at their neckline.” It made her sad as she realized “they were swimming towards the water, not away from it.”¹¹

Harvey affected the lives of every Houston inhabitant, directly or indirectly, including local animals. As family members, pets are invaluable, especially during tough times when they can be a great comfort. Perhaps that is why even in times of disaster, we refuse to leave their side — no matter the cost or how high the water. At the end of the day, our pets are family — whether they slither, swim, or walk on all fours.

Carmen Crandell is a student in the University of Houston Honors College majoring in history and minoring in classical studies. She is most interested in ancient history, specifically ancient Greece, and plans to attend graduate school to ultimately become a museum curator.



Two rescuers carry a scared golden retriever to safety as rain from Hurricane Harvey continues to fall. Photo courtesy of Francine Spiering.



The George R. Brown Convention Center became home to hundreds of pets and their owners after Hurricane Harvey devastated Houston.

*Photo courtesy of Revolution Messaging, Flickr.**

A First Time for Everything: Harvey's Cohabitated Animal Shelter

By Anna Mayzenberg

The first day the George R. Brown Convention Center (GRB) opened as a Hurricane Harvey shelter, pet owners arriving there, having escaped the floodwaters, faced a horrible dilemma: stay outside in the rain to comfort their pets or abandon them to stay dry themselves. The Red Cross, which frequently manages disaster shelters, such as GRB, does not generally allow pets due to concerns about cleanliness, disorderly animals, and the safety of disaster evacuees with respiratory conditions. As a result, some pet owners endanger their own lives by refusing to evacuate because they are afraid their pets will die if left behind. Salise Shuttlesworth, founder and executive director at Friends For Life Shelter, could not sit by and watch this happen. As she came to understand both the concerns of the Red Cross and the necessity of providing a potentially life-saving shelter, she was determined to reconcile the two issues. By bridging that gap during Harvey, she affirmed that for “the first time in U.S. history, a cohabitated shelter [was] pre-approved by a city and carried out in a mega-shelter in a major U.S. city.”¹

The City of Houston opened the GRB shelter on August 27, 2017, when other facilities became overwhelmed with evacuees. After seeing the distress of pet owners the first night, associate medical director for Houston Fire Department Emergency Medical Services (HFD EMS) and a member of the city’s animal advisory committee, Dr. Chris Souders, worked alongside committee members to obtain approvals to designate a section of the shelter for people with their pets. After receiving approval, Souders contacted Shuttlesworth, who volunteered to set up the space and manage it, determined to demonstrate that a cohabitated pet

shelter was not inherently dangerous and dirty; done right, it could be a place of comfort and safety. In doing so, she set a precedent for the future.²

In establishing the shelter protocols, Shuttlesworth, also an attorney, duplicated the policies used by Friends For Life to assuage concerns about cleanliness and public safety. Shuttlesworth remembered being apprehensive when the Houston Health Department representative came to evaluate the cohabitated shelter; much to Shuttlesworth’s relief, the woman became the shelter’s fan, remarking, “It is so clean. This animal area is cleaner than the human areas! And I just cannot find a single thing to ding you guys on.” In turn, because cleanliness was such a priority, and the non-pet owners were in a separate area, allergies did not become an issue. To address the potentially unwieldy animals, such as those with storm phobia, Friends For Life had sedatives available should they be needed. Following the carefully crafted protocols kept worries at bay and offered pet owners a safe haven with their animals at their sides.³

To further ensure safety, Friends For Life immediately vaccinated every animal that arrived at the GRB shelter. With 1,500 animals passing through the facility in an eighteen-day time frame — 90 percent of which had never seen a veterinarian before — this policy resulted in zero cases of canine parvovirus or distemper in the shelter. Given how contagious and dangerous these diseases are, avoiding them was remarkable.

The shelter also prioritized the general health of the animals. Dr. Katie Eick, a local veterinarian with a mobile unit, came to the rescue, offering her services to the shelter. Shuttlesworth said that as soon as they told Eick they

needed her help, “she raked her arm down her supply shelves at her pharmacy in her clinic and dumped it into ... tubs. And she showed up!”⁷⁴ She started seeing animals right away.

Once animal health was managed, the staff turned its attention to food and supplies. Organizers set up drop off zones and posted them on Facebook for people who wanted to donate but could not get downtown. Thus, thousands of pounds of food and supplies came into the shelter, essentially creating a pet shop full of items available free of charge.

As evacuees came into the cohabitated shelter, every animal received a number and a bracelet that matched numbered bracelets given to all of the people in their family; any supplies, such as crates, beds, or leashes, were also tagged with that number. As one person recorded all the pet owner’s information, another entered it into a spreadsheet by the assigned number, giving the shelter an accessible, searchable database. Pet owners used the tags to get food or supplies for their animals at the supply station.

The number system allowed people to stay with their pets and take care of them, freeing the Friends For Life team to triage 1,500 animals and manage the shelter protocols. Of course, some people could not provide all the care themselves. Shuttlesworth described “people who were not mobile, seniors, who couldn’t come to the station every day and get the food to their animal, or couldn’t walk their dog outside,” so “[the shelter] had teams that just walked around the facility to make sure that people had what they needed.”⁷⁵

Friends For Life’s experience running its shelter provided the model for the GRB shelter’s success. The staff was trained in this type of work; they had specific guidelines and written standard operating procedures to follow. “What we did was basically set up a mini Friends For Life,” Shuttlesworth explained. “We checked in people and kept data like we do at our front desk. We practiced a heart of service and non-judgement, as is our culture. We took into account the human part of the human-animal equation.”⁷⁶ They simply adapted what they knew to meet the needs on a much larger scale.

The cohabitated shelter was not perfect, and, as always in a disaster, it is important to learn from what went wrong. The most critical lesson learned was that organizers must have a plan to assist people when the shelter closes. Dr. David Persse, public health authority for the City of Houston



Donations were plentiful at the shelter, with pet food, crates, and more coming in from across Houston. These supplies ensured that even people who came in with almost nothing could take care of their animals.

Photo courtesy of Friends For Life.

and physician director of HFD EMS, pointed out, “One of the most difficult things about a shelter operation is closing the shelter. Because while a significant number of folks want to get back home as quick as they can, there are a lot of folks who don’t have a home to go back to anymore.”⁷⁷

The same applied to the cohabitated shelter area. Although they did their best to accommodate requests for help, Friends For Life lacked the facilities to care for a large number of animals while people looked for housing. Nor did the staff have experience finding people places to stay post-shutdown. While the city works to place people in temporary housing, Shuttlesworth emphasized the importance of also making pet-friendly housing available so people are not once again faced with giving up their pets to ensure their own safety.

Friends For Life collaborated with the American National Red Cross, the U.S. Department of Agriculture, and the Louisiana Department of Agriculture and Forestry to create a manual that thoroughly explains how to start and successfully operate a cohabitated shelter, based on research data and lived experience. It is available to download on the Friends For Life website.

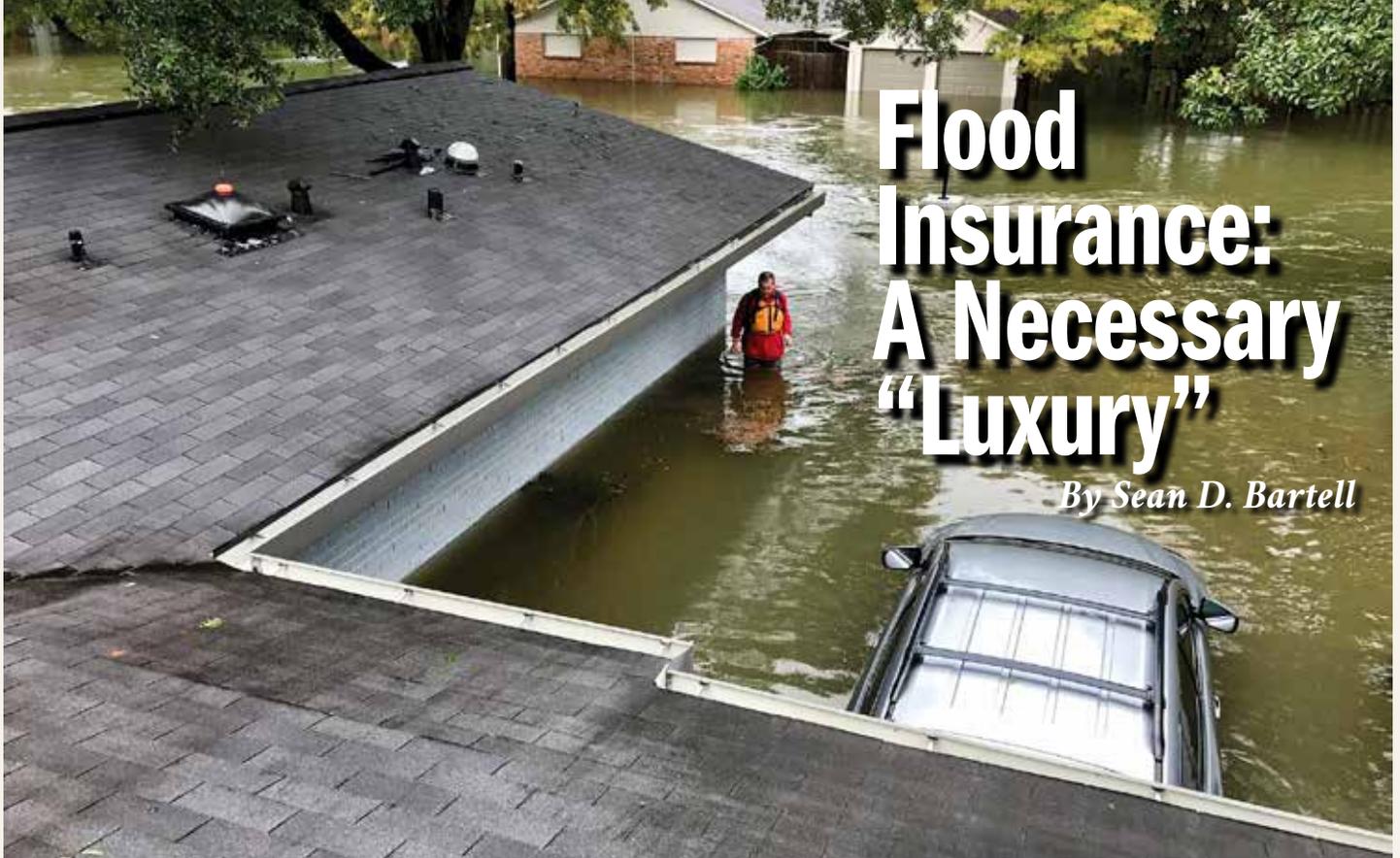


Having found a safe haven, a dog rests on an American Red Cross blanket. The change in policy to allow pets in the shelter was a big step forward in responding to disasters.

Photo courtesy of Friends For Life.

Ultimately, the shelter was a success, from cleanliness to comfort. In fact, it was so comfortable that people without pets sometimes came to spend time in the cohabitated area because it had a sense of peace about it. Shuttlesworth attributes this, in part, to people and their animals comforting each other, adding, “You cannot possibly overstate how important [that emotional connection] is.”⁷⁸ Houston’s first foray into cohabitated shelters proved that animals and people can and should be together in a disaster.

Anna Mayzenberg is pursuing a bachelor’s degree in management information systems with a minor in phronêsis from the Honors College at the University of Houston. She is a *Houston History* intern and aspires to have a writing career.



Flood Insurance: A Necessary “Luxury”

By Sean D. Bartell

Built in 1956, Eric Dowding's Braeburn home had never flooded until he hit the trifecta: Memorial Day 2015, Tax Day 2016, and Harvey in 2017. Photo courtesy of Eric Dowding.

When Hurricane Harvey came, flooding was nothing new to Braeburn resident Eric Dowding. Having lived in Houston with his wife Trang Phan since Hurricane Rita in 2005, he was familiar with hurricanes but did not personally experience his first flood until Memorial Day in 2015. His home situated on Brays Bayou in Greater Meyerland had not flooded once since it was built in 1956, so they went into the forecasted flash floods more than a little confident — even by his own admission, “cocky.”¹

Their home's first flood brought in twelve inches of water. But, thanks to flood insurance, “We got a new house out of it. Let's put it bluntly,” he said in an interview with the University of Houston's Resilient Houston: Documenting Hurricane Harvey project. He explained, “It damaged all the walls ... the original wood floor. So that had to come up. You take out all the sheetrock up to two or three feet above the line ... redo all your walls, all your flooring. Then you have to repaint everything. Your kitchen, all your cabinets, so it's a redo.”²

Flood insurance provided the resources to rebuild everything, but that effort, money, and stress were all in vain when the 2016 Tax Day flood washed away their hard work shortly after the couple moved back home. While Tax Day brought only four inches of water, the second remodel took eight months, and they had been back in the house for less than a year when Harvey arrived with over two feet of water.

Houston has a lengthy history with floods well preceding Dowding's experience that makes investing in flood insurance a worthwhile practice. The very same marshy, lowland



Eric Dowding and his wife Trang Phan slept on the countertops to escape the rising water during Harvey. “Sleeping on a kitchen counter is not great. It's a little cold. And it's a little short,” Eric quipped.

Photo courtesy of Eric Dowding.

terrain that engendered the city's success as an international port makes it a ripe target for severe flooding. The National Flood Insurance Program was formed to “transfer some of the financial risk of property owners to the federal government” and “mitigate comprehensive flood risk through the development and implementation of floodplain management standards.” During Houston's 1976 flood, eight years after the program began in full, 40 percent of afflicted homes had flood insurance. By contrast, when Harvey struck, approximately 15 percent of 1.6 million homes in Harris County

had flood insurance, rising to 28 percent for “high risk” properties. With the city’s urban sprawl and the mounting storm severity from climate change, lack of insurance has become an increasingly important issue.³

The most significant flood to devastate the city prior to



FEMA and the National Flood Insurance Program advocate for the necessity of flood insurance, particularly in Houston, providing information to insurers to distribute through social media.

Photo courtesy of FEMA and the National Flood Insurance Program.

Harvey was Tropical Storm Allison. The storm hit Houston on June 5, 2001, and again on June 8 as it wandered out to the Gulf and back again, affecting two million people and resulting in \$5 billion in damage. One-third of Allison’s flood claims came from outside of the mapped 100-year floodplain area — where flooding was expected, and flood insurance was broadly mandatory — leaving tens of thousands uninsured and paying off disaster loans with monthly installments roughly equal to an annual flood insurance premium at the time. Events of Allison’s severity had been quite rare, but the 2015 Memorial Day and 2016 Tax Day floods were nearly as severe, albeit over a shorter period. These events may not be common, but they have come in rapid succession in recent years. On top of all this, Harvey dealt more than ten times the property damage of Allison, and 68 percent of the damaged homes in Harris County resided outside the special flood hazard areas marked by FEMA.⁴

Flood insurance in Houston is thus a necessary “luxury.” Flood damage repair and remodeling costs can easily reach six figures, and flooding patterns have shown no sign of stopping. Homeowner’s insurance typically does not cover any flood damage. FEMA provides some relief, but it tends to be just a few thousand dollars and requires bureaucratic hurdles at which many people balk. This is why people

without sufficient flood insurance will turn to disaster loans. The Small Business Administration provided \$367 million in relief to Texas businesses and homeowners, but these loans can be problematic. For example, a disaster loan providing \$50,000 will on average have interest payments that exceed \$200 per month — a considerably more expensive cost compared to an annual flood insurance premium.⁵

Flood insurance has the potential to provide a massive return. According to the Harris County Engineering Department, the average annual flood insurance premium is about \$500, and the maximum a policy can cover is \$100,000 for contents and \$250,000 for dwelling damage. The premium naturally increases and decreases according to risk, with some particularly low-risk areas having rates as low as \$119. The math is simple. Disaster loans, according to FEMA’s 2018 estimate, cost six times more and provide a fraction of the assistance that flood insurance offers, and that difference will likely increase over time. Even one inch of water can deal \$25,000 in damage, and FEMA relief averages \$8,000 or less. Paying a premium could cover that ten times over before reaching any sort of upper limit. Plus, relief is only intended to get you back on your feet; insurance is meant to help you rebuild your life. Don Witt, who had four feet of water in his Kingwood home, reflected on



Floodwater rose sixty-three inches in Sidney Nice’s Atascocita Point home. During a flood, water penetrates the walls, furniture, cabinets, and appliances, leaving mud, sludge, sewage, and more in its wake and making recovery expensive.

Photo courtesy of Sidney Nice and reduceflooding.com.

the value of flood insurance, saying, “We have a brand new house. ... All the windows, all the doors, all the appliances, even the air conditioner ... everything was being replaced.”⁶

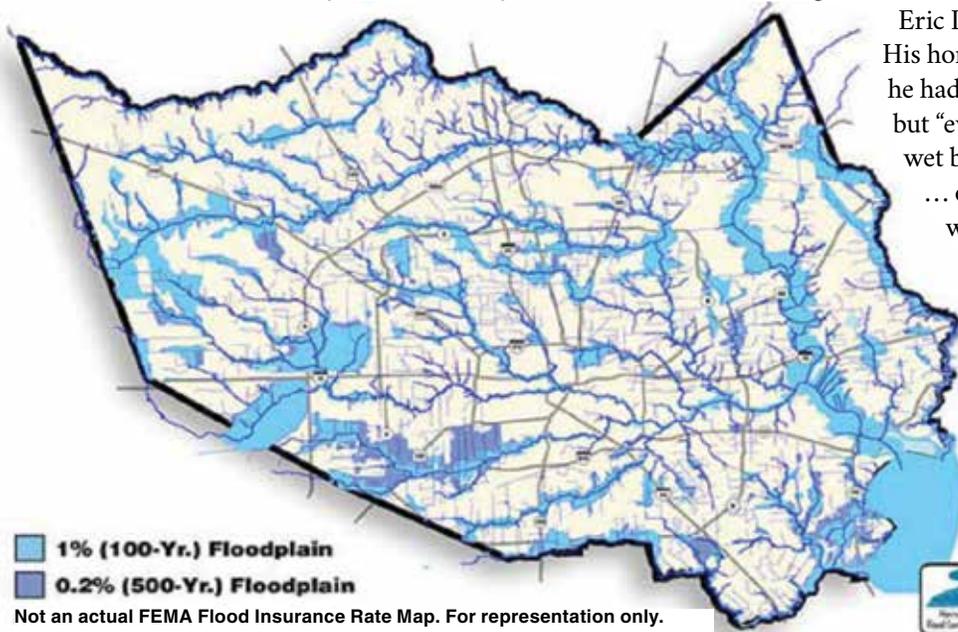
It is important to note that flood insurance also applies to renters, residents who are not covered by policies their landlords may have on the dwelling. Renters who want to be protected must purchase their own policy to cover their contents, and, in particularly flood-prone areas, renters may be required to insure their belongings just to sign a lease. Thankfully, contents-only insurance can be cheaper than insuring the structure itself.⁷

Of course, this basic arithmetic can have little bearing on how real life plays out. While some people opt to forego flood insurance because they assume flooding will never happen to them, others face a more difficult challenge. Although \$500 per year may be a bargain in terms of money spent versus money paid for a claim, in some households, that cost is still a few hundred dollars needed to pay for food or shelter. Since Houston residents can no longer afford to be complacent about flooding, if a premium is beyond one’s means, they can consider other steps to protect their belongings. For example, when storms approach, they can elevate furniture and belongings, check weather updates, and ensure that electrical appliances are kept as far from flood water as possible. But if it is a feasible investment, flood insurance should be a priority.

In Houston, flooding is no longer an if, but a when; being prepared is not optional. Homes that have avoided flooding for decades have been met with twelve inches or more of water in the three subsequent “500-year” floods from 2015 to 2017. A 500-year flood does not mean that an area is

The floodplain map for Harris County, circa 2018, shows areas at highest risk of flooding in light blue. These areas generally require flood insurance for a mortgage, unlike homes in the 500-year floodplain, where that is less likely to be the case.

Photo courtesy of the Harris County Flood Control District.



safe for 499 years after one occurs, but rather that there is a 0.2 percent chance of one occurring any given year. As of August 2020, Houston has not had a 500-year flood since Harvey, but the area still saw major flooding in 2019 from heavy rain in May and Tropical Storm Imelda in September that put people out of their homes for weeks or even months. Flood insurance in such instances could be crucial to their recovery.⁸



Following Hurricane Harvey, Eric Dowding and his wife decided to rebuild their home rather than fix it again. They are still living with studs for walls while they wait.

Photo courtesy of Eric Dowding.

Before approving loans in high-risk flood regions of Houston, lenders now require residents to procure flood insurance when purchasing property in the area. Despite that, 25 percent of flood claims are in regions not considered to be at high risk for flooding and are not required to be insured. Further, with floodplain reassessment an ongoing, multi-year project, updates are not rapidly available. The only certainty in Houston post-Harvey is that it *will* flood again and being prepared for that possibility is vital.⁹

Eric Dowding, for one, has made up his mind. His home needs to be insured. Before Harvey, he had put things around his house up higher, but “everything that [he] had prepared still got wet because it’s not easy elevating everything ... over two feet,” he explained. As of this writing, three years post-Harvey, he is still waiting for his rebuild, living with entire walls of his home missing. Despite this, he has as positive an outlook as possible on his ability to weather future floods and offers a related piece of advice: “Get flood insurance. Seriously — every house in Houston should have flood insurance.”¹⁰

Sean D. Bartell graduated from the University of Houston in 2020 with degrees in English and history.

Drawing Power from Community — Houston Strong

By Eva Maria Bernal

Although Hurricane Harvey devastated Houston, residents' spirits rose above it all, symbolized by the phrase: Houston Strong. The expression became a rallying cry that symbolized the city's resilience, hope, and optimism as residents worked to rebuild. But it also meant different things to different people, from helping a neighbor to unifying the city around a World Series run. We asked participants in the Resilient Houston: Documenting Hurricane Harvey project what Houston Strong meant to them.

Eva Maria Bernal is a junior at the University of Houston, majoring in history and minoring in biology. She has been involved with *Houston History* and the Center for Public History as a volunteer and an intern since 2018, when she assisted with the Hurricane Harvey oral history harvest.



"[Houston Strong] was so widespread in Harvey ... I love how Houston is so diverse. ... Different ethnicities, different religions, and this crossed that. This was not a Jewish issue. This was not a Christian issue. This was a

Houston issue, and it continues to be. ... We can all come together and support each other, even if we don't have an answer for it."¹ Nomi Solomon, Meyerland resident.

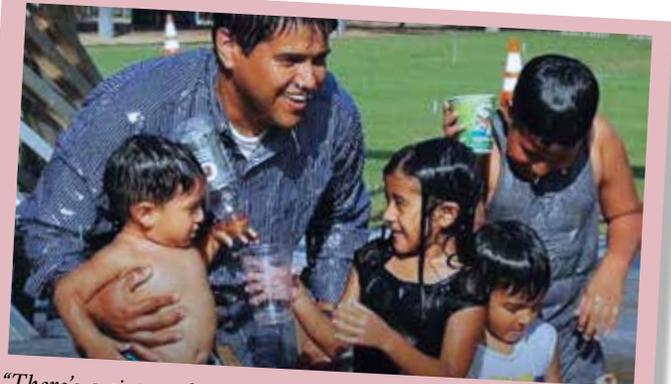
Photo courtesy of Joan Gonzalez, Pixabay.

"[Houston Strong is] a heightened sense of community ... people wanting to get their familiar restaurants open and their familiar grocery store open, the school back up and running ... And to see people being willing to help each other out — whether it was a sandwich or a cooler of water or stopping by and saying, 'How you doing?'"² Tom Slagle, retired fire chief, Kingwood.



"[Houston Strong] was so evident by the support of the community. ... We all worked together. I had an army of friends come that first day I was able to come back [home]. Literally, 40 to 50 people ... I felt so loved because, at the time, I wasn't able to make those decisions for myself. ... Friends become your family."³ Ana Vazao, Cypress resident.

Photo courtesy of Ana Vazao.



"There's a picture that comes into my mind about what [Houston Strong] is ... It is going to work early, because you know you want ... to come home and work on the house. And after that, go to your family and try to be the dad and make everything normal ... spend a couple of hours late with your wife and maybe ten minutes with your kids, because they're about to go to bed, and then getting up early and doing it again. ... That's Houston Strong. ... You didn't let it break you. You just confronted it, and you did what you could to make it better."⁴ José Manuel Méndez, Spring resident.

Photo courtesy of the Méndez family.



"Houston Strong winds up meaning the Astros more than anything else ... [They] helped lift our spirits ... but I think we need more than baseball to make this city survive."⁵ David Lowy, Meyerland resident.

Photo courtesy of Diana J. Rodriguez.

"Whoever came up with [Houston Strong] really nailed it ... [At the Memorial City Mall command center] the food court restaurants were coming out, providing food for all the volunteers. ... There were just makeshift donation drop-offs. ... It's just amazing how many different families from different parts of the world [were] ... dropping off cases of water to pillowcases to deodorant."⁶ Michael de Leon, Houston Fire Department Station 49

HOUSTON HAPPENINGS



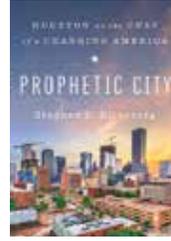
Photo Archivist Joel Draut has retired after twenty-two years at Houston Public Library's Houston Metropolitan Research Center. Joel helped countless researchers—including those writing for this publication—find and reproduce images of Houston's history. Joel brought not only his photogra-

phy skills, but also an intellectual curiosity and singular ability to connect with folks to his work. Plus, he seemed to have a mental catalogue of literally millions of images in the HMRC collection. He left lasting impressions on anyone lucky enough to work with him — whether they requested images for a single project, or had the good fortune of sitting at a desk next to him for years.

HPL Special Collections have launched a crowdsourcing project called “Be the LINK to History.” The library is asking contributors to identify unknown people, places, and objects in archival photographs. By sharing their knowledge, contributors can help others learn and discover more about Houston's history. More information is available on the project pages for the Houston Metropolitan Research Center (<https://digital.houstonlibrary.org/metadata-hmrc>) and the African American Library at the Gregory School (<https://digital.houstonlibrary.org/metadata-gre>).

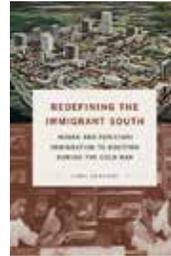
BOOKS:

Prophetic City: Houston on the Cusp of a Changing America by Stephen L. Klineberg, Ph.D. (Avid Reader Press, 2020). Houston has transformed over the last forty years into one of the nation's most diverse cities, and no one knows that better than Stephen Klineberg, who has been tracing that progress through the Houston



Area Survey from the Kinder Institute for Urban Research at Rice University for the last thirty-nine years. No metropolitan area in the country has been tracked in this way over such a lengthy time. Klineberg provides historical context for the changes that are traced through attitudes on everything from education to immigration, employment, poverty, relationships, politics, and, most importantly, acceptance of others. These changes in demographics and inclusiveness make Houston the prophetic city, setting trends that others will follow. Please see also *Houston History's* interview with Stephen Klineberg in Spring 2020 issue.

Redefining the Immigrant South: Indian and Pakistani Immigration to Houston during the Cold War by Uzma Quraishi,



Ph.D. (University of North Carolina Press, 2020). Early in the Cold War, the United States mounted public diplomacy programs, including initiatives with India and Pakistan, that created migration links allowing American universities, like the University of Houston, to emerge as immigration hubs for a selective, student-led South Asian migration stream. By the late twentieth century, Houston's South Asian community had

become one of the area's most prosperous and one of the nation's largest. Uzma Quraishi traces this pioneering community, arguing that they appealed to class conformity and endorsed the model minority myth to navigate the Sunbelt South's shifting complexities. By examining Indian and Pakistani immigration to a city transitioning out of Jim Crow, she reframes our understanding of twentieth-century migration, the changing South, and the politics of race, class, and ethnicity.

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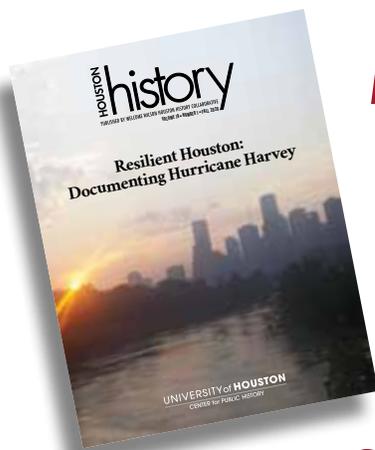
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